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ABSTRACT

Reinforcing the concept that study skills instruction needs to be part of the curriculum at every grade level and needs to be taught through a developmental approach, this resource book provides suggested student competencies, teaching approaches, and sample activities. This guide contains a section for each of seven study skills--locating information, organizing information, recalling information, adjusting reading rate, formalizing study methods, using graphic aids, and following directions. Each section includes: (1) lists of student competencies in study skills established at three levels (primary grades K-3, intermediate grades 4-8, and senior grades 9-12); (2) in-depth look at each study skill, including definition of terms, rationales for instruction, and suggested approaches to teaching study skills; and (3) sample study skills activities for both elementary and secondary students. A reference guide is provided at the beginning of the book, listing various topics alphabetically, including dictionary use, questioning models, and time management. In addition, a chart of the development of study skills in grades K-12 outlines the aspects of each study skill needed for each grade level. (Twenty-seven references are appended.) (MM)

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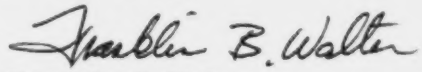
Foreword

The development of students as independent, lifelong learners is an educational goal of all schools in Ohio. Furthermore, students must be prepared to live and work in an age that is increasingly dominated by information. To attain this goal, a school's curriculum must provide students with an adequate number of opportunities to learn how to acquire information, manage information, and create new information. Study skills offer an efficient approach to such information management. In addition, students benefiting from effective study skills instruction are more likely to become better readers, receive higher grades, and enjoy learning.

Study Skills: A Resource Book reinforces the concept that study skills instruction needs to be part of the curriculum at every grade level and needs to be taught through a developmental approach. The resource book provides suggested student competencies, teaching approaches, and sample activities. It was written to assist school districts as they work to incorporate study skills into their courses of study.



Franklin B. Walter
Superintendent of Public Instruction

STUDY SKILLS IN THE COURSE OF STUDY

The State Board of Education's 1983 minimum standards for elementary and secondary schools reinforce a commitment to ensure study skills instruction in Ohio schools.

> Courses of study shall provide for the following topics to be part of the curriculum: career education, citizenship, human relations education, multicultural education, energy and resource conservation education, and *instruction in study skills.*
>
> from Ohio Revised Code 3301-35-02(b)

Study skills instruction as part of courses of study allows for

1. A developmental approach to study skills instruction

   Study skills instruction, as with any other type of skill instruction, requires that certain basic skills be introduced early in the curriculum so that a foundation for learning more complex skills is established. When students fail to possess these basic skills, the effectiveness of learning a more complex study skill is seriously hampered. For example, to learn the study skill of summarizing a student must be competent in the following basic skills:

   a) categorizing information
   b) sequencing information
   c) locating main idea
   d) outlining information

2. Adequate learning opportunities for students to acquire study skills

   Acquisition of good study skills requires extensive practice by the student. The benefits of good study skills are realized only after students have had many opportunities to use them in learning situations. For example, the advantages of taking reading notes are numerous. They help students in summarizing material; in organizing material for recall; and as a resource in reviewing materials for exams. But if notetaking is seldom required as part of reading assignments, it is very unlikely that students will recognize the value of using such a study skill.

3. A shared responsibility by all faculty and staff for study skills instruction.

   A school-wide commitment to study skills instruction is needed for undertaking a developmental approach to instruction and for providing students with sufficient opportunities to acquire study skills. Placing responsibility at one grade level, or with just a few individuals on the faculty, is unwise because achieving effective study skills instruction requires more time and resources than any individual or any segment of the curriculum can provide.

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INTRODUCTION

Using this publication

The purpose of this publication is to reinforce the concept that study skills instruction needs to be part of the curriculum at every grade level and needs to be taught through a developmental approach. To achieve this purpose *Study Skills: A Resource Book* contains a section for each of the seven study skills:

1. Locating information
2. Organizing information
3. Recalling information
4. Adjusting reading rate
5. Formalizing study methods
6. Using graphic aids
7. Following directions

Each section includes

1. **Lists of student competencies in study skills established at three levels (primary grades K-3, intermediate grades 4-8, and senior grades 9-12).**

   These competencies were written to underscore the developmental aspect of each study skill. By no means are these competencies inclusive for each study skill; rather, they serve simply as guideposts in determining expected student mastery at various points in the schooling process.

2. **An in-depth look at each study skill including definition of terms, rationales for instruction, and suggested approaches to teaching study skills.**

   Each of the seven study skills is addressed in-depth to provide the necessary background information for teaching the skill. Key terms are defined; important subskills are identified; and viable instructional approaches are suggested within this part of each study skill section.

3. **Sample study skills activities for both elementary and secondary students.**

   Sample skill activities are provided at the end of each study skill section. (The exceptions are the sections on organizing information and formalizing study methods. In these sections, skill activities have been integrated within the skill development discussion.) These examples are given to illustrate the many different ways study skills instruction can be part of regular classroom instruction. An effort was made to provide a good mix of activities for both elementary and secondary students.

Reference Guide

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A DEVELOPMENTAL LOOK AT STUDY SKILLS, K-12

STUDY SKILL GRADE	LOCATING INFORMATION	ORGANIZING INFORMATION	RECALLING INFORMATION
K - 3	• alphabetizing • locating words and meanings in the dictionary • using table of contents • exposure to reference materials • proper care for books • appropriate library behavior • general understanding of book arrangement	• sorting information into categories • establishing categories • sequencing information • determining essential and non-essential information in stories	• recognizing that different types of questions require different sources of information • using questions to help generate interest
4 - 8	• using book parts • extending dictionary skills • understanding book classification • using the card catalog • using special reference materials	• categorizing terms into superordinate, subordinate, and equal status relationship • understanding paragraph patterns • locating the main idea • developing outlining, summarizing, and notetaking skills	• employing organized reading study strategies (SQ3R) • employing memory aids, i.e., association, imagery
9 - 12	• using various periodical indexes • knowing other book classification systems • analyzing the reliability of information	• continued use of outlining, summarizing and notetaking	• continued generation of questions prior to reading • continued employment of organized reading-study strategies

ADJUSTING READING RATE	FORMALIZING STUDY METHODS	USING GRAPHIC AIDS	FOLLOWING DIRECTIONS
• exhibiting familiarity with various types of books • establishing purposes for reading	• recognizing ways to improve the study environment • modeling appropriate behavior for independent study	• using pictures as an aid in understanding text • reading picture graphs, and circle and pie graphs	• following one- and two-step oral directions • following one- and two-step written directions
• demonstrating the ability to vary rate with purpose • using skimming and scanning techniques	• employing techniques for improving concentration • using a form of scheduling to manage time • establishing appropriate study techniques for exams	• reading and interpreting tables, charts, bar and line graphs • reading and interpreting maps and diagrams • reading and interpreting timelines	• following three-step oral directions • following three-step written directions • following multi-step oral directions • following multi-step written directions
• using skimming techniques to evaluate books, articles, etc.	• completing independent assignments • researching information in an organized manner	• preparing graphic aids as a means of presenting information • interpreting political cartoons	• following multi-step written directions • interpreting directions for applicability

SECTION I: LOCATING INFORMATION

INTRODUCTION

The ability to locate information is a prerequisite for independent, lifelong self-instruction because it provides the learner with the necessary means of securing sources of information. Formal instruction in this study skill begins in the primary grades with the development of necessary readiness skills which will prepare students for extended instruction in library and book skills during the intermediate grades. At the senior level, continued instruction in library reference activities and in critical evaluation of information is strongly suggested.

STUDENT COMPETENCIES FOR LOCATING INFORMATION

Student competencies at the primary level (K-3)

- Students learn that many sources of information are stored and arranged alphabetically.
- Students place words in alphabetical sequence.
- Students locate words and their meanings in a dictionary.
- Students use a table of contents in locating information in a book, magazine, newspaper, etc.
- Students use general reference materials found in a classroom such as encyclopedias, maps, globes, etc.
- Students develop initial library skills such as proper care of books, appropriate library behavior, and book arrangement.

Student competencies at the intermediate level (4-8)

- Students use book parts such as preface, table of contents, headings, index, bibliography, appendix, glossary, and key.
- Students use a dictionary for pronouncing words, uncovering new meanings of words, confirming spelling of words, and expanding one's vocabulary.
- Students know the classification system (Dewey Decimal) used to arrange books in the library.
- Students locate books using the card catalog or other search systems.
- Students use special reference materials such as encyclopedias, atlases, almanacs, yearbooks, directories, newspapers and magazines.

Student competencies at the senior level (9-12)

- Students use various periodical indexes located in the library.
- Students know other classification systems such as Library of Congress and Superintendent of Government Documents.
- Students analyze the reliability of information by checking the author's qualifications, the author's bias, the type of publication, and date of publication.

SKILL DEVELOPMENT IN LOCATING INFORMATION

Learning to alphabetize

Since many sources of information are arranged and stored alphabetically, it is important to establish a systematic approach to teaching alphabetization. For example:

1. Informal work in alphabetical sequencing can begin with students learning the alphabet in correct sequence.

2. The next step is for students to arrange words in sequence according to the first letter.
3. Then, students should arrange words with the same first letter, but with different second letters, and so on.
4. Finally, students are provided with guided instruction and practice in using alphabetical sequencing. Exercises with picture or junior dictionaries are most helpful in reinforcing these skills.

Using the dictionary

When a dictionary is used, various skills are employed including word recognition skills, comprehension skills, and study skills. During dictionary usage instruction, students need to develop the attitude that there is an ongoing need for dictionary skills even after one becomes a fluent reader.

Goals of Dictionary Instruction (Heilman, 1977)

1. Helping the student with the pronunciation of words.
2. Helping the student disclose new meanings of words which may be known in only one or a limited number of connotations.
3. Helping the student confirm the spelling of a word when its spelling can only be approximated.
4. Helping the student expand vocabulary through mastery of inflected and derived forms of known root words.

A Developmental Sequence for Acquiring Dictionary Skills (Heilman, 1977)

1. Recognize and differentiate between letters.
2. Associate letter names with letter symbols.
3. Learn the letters of the alphabet in order.
4. Arrange a number of words by alphabetical order of their initial letter.
5. Extend above skill to second and third letters of words, eventually working through all letters of a word if necessary.
6. Develop facility in rapid, effective use of dictionary, e.g., knowing where H, P, and V come in the dictionary; being able to open the dictionary as near as possible to the word being studied.
7. Develop the ability to use accent marks in arriving at the pronunciation of words.
8. Learn to interpret phonetic spelling used in the dictionary.
9. Use "pronunciation key" given somewhere on each double page of most dictionaries.
10. Work out different pronunciations and meanings of words which are spelled alike.
11. Determine which is the preferred pronunciations when several are given.
12. Select the meaning which fits the context.
13. Look at guide words found at the top of each page to tell at a glance if the page contains the word being sought.
14. Use special sections of a dictionary: geographical terms and names, biographical data, foreign words and phrases.

Using book parts

As students advance through the grades, a greater reliance is placed on using the textbook as the major source of information. Approximately 85% of the instruction at the secondary level centers around the textbook; thus, it is vital that all students have a firm understanding of how to use book parts to locate information.

1. **Table of contents**
The table of contents provides a reader with a structured outline of subject matter discussed in the book. When students read the table of contents, they receive an overview of the book's contents and a general feeling for its organization. Specifically, students need to learn the following:
    a. How the table of contents shows the relationship between chapters and units.
    b. The importance of chapter sequence, since this illustrates the way the information has been organized by the author.
    c. How to identify where the needed information can be located. Often included within the table of contents is a list of maps or illustrations used in the book. This listing includes the title and the page where the map or illustration can be found.

2. **Preface (Introduction, Foreword)**
Probably one of the least understood and least used book parts is the preface. It provides the reader with a) reasons why the book was written; b) an explanation of the organizational scheme of the book; and c) an acknowledgment to the people who contributed to its preparation. Teachers should make a point of drawing attention to this section of the book by reading the preface to the class and discussing the reasons why the author felt the book needed to be written. In addition, teachers may want to continue with a discussion of why the textbook was selected for the class and how students are expected to use the information provided by the book. The following types of questions can be used with students when discussing the preface:
    a. To whom or to what group does the author address the book?
    b. What is the author's stated purpose?
    c. Which new features does the author stress?
    d. Which unique features does the author believe are found in the book?

3. **Chapter, section and subsection headings**
Authors use chapter titles, and section and subsection headings to help organize the concepts they want presented to the reader. If the title, sections, and subsection headings were to stand alone, they would resemble an outline of the chapter. Students can be made aware of these organizational aids by outlining one or two chapters in their textbook using just the chapter title, headings, and subheadings. Teachers may also want to discuss the types of organizational patterns of information that can be derived from the outline. Often such a topical outline uncovers that the author presented the information either by chronology, from simple to complex, or by comparison and contrast.

4. **Index**
An index, which is located at the end of a book, combines an alphabetical list of names, subjects, events, etc., with relevant page numbers. An index provides the reader with more in-depth information about the topical relationships within the text than can be found in the table of contents. To be effective in using an index, students must acquire the skills of classifying and cross-referencing. Since any topic may be discussed under several headings, students must first learn to classify topics according to other related subjects. After students gain familiarity with classification of topics, allow them to practice cross-referencing by choosing a topic and then listing all the references where the topic is found in the index.

5. **Bibliography**
A bibliography provides a reader with a way to check the author's sources including how the author interpreted these sources. A bibliographic listing of books, articles, or materials serves as an aid in critical reading.

6. **Appendix, glossary, and key**
An appendix, glossary, and key are book parts that may not appear in some books, but students need to be aware of their function in providing information to the reader. An appendix contains material which may further explain or expand the content of the text, but is not necessary to the main text. For example, in a geography book, the appendix may provide census information, a listing of state and national capitals, tables on world imports and exports, etc. The glossary is a specialized dictionary which clarifies the word meanings of terms that are used in the text. A key, found in many textbooks, provides students with answers to questions and exercises presented in the text.

Developing library skills
Beyond the classroom and the textbook, students need to be aware of the wealth of information housed in libraries, and they need to receive instruction in accessing this information easily.

Initial library skills can be introduced at the primary level by focusing instruction on the proper care of books, appropriate library behavior and general book arrangement. Providing such library readiness skills prior to formal library or bibliographic instruction enhances the effectiveness of this latter instruction.

Introduction of the card catalog and book arrangement should occur in the intermediate grades. First, students should understand that the cards in the card catalog are arranged alphabetically by author, subject, or title and these three types of cards all contain the same information. Then, it should be explained how each card is read, the differences among the cards, when each card is used, and the purpose of the numbers and letters found in the left hand corner of each card. After introducing the card catalog, students need to become familiar with the way books are arranged in the library. Nearly all school libraries classify their books according to the Dewey Decimal System, but secondary students, especially those who plan to attend college, need to gain familiarity with the Library of Congress and Superintendent of Government Documents Classification Systems. (See pages 17-18 for a detailed description of the Dewey Decimal and Library of Congress Classification Systems.)

As students begin to formalize their research skills, they should be introduced to the various periodical indexes that are located in the library. These indexes are used to locate specific articles in periodicals and other serials and serve as excellent guides to current information. The information within a periodical index is arranged alphabetically by subject and is usually cross-referenced by author and/or title. Each citation will include the article title, the author's name, the title of the journal in which the article appears, the volume and issue numbers, the date of publication, and page numbers.

Libraries hold special references and other special collections, and students need to be made aware of these unique holdings. References such as encyclopedias, atlases, periodicals, almanacs, yearbooks, annuals, directories and, of course, newspapers and magazines all contain a wealth of special or current information that can supplement the knowledge presented in the classroom. Also, many libraries maintain collections of records, video tapes, films, filmstrips and computer software. Thus, it is very important that students familiarize themselves with all the resources provided by both school and public libraries.

Using encyclopedias
A common source of information found in libraries, classrooms, and some homes is the encyclopedia. But prior to using an encyclopedia, pupils need to understand

1. the type of information contained in it,
2. the purposes for which the information has been collected, and
3. the relative value of the information contained in it.

Students should recognize that encyclopedias do have some shortcomings. Information found in encyclopedias is often dated, and encyclopedias, on occasion, report different and sometimes contradictory facts. In addition, teachers should realize that the readability of some encyclopedias may be too difficult for many intermediate grade students.

Encyclopedia Skills

1. Use the encyclopedia index.
2. Locate information on the spine of each volume.
3. Use guide words and apply cross-referencing skills.
4. Understand the boldface type and parentheses that are used in main entries.
5. Use the bibliographies at the end of articles.

SKILL ACTIVITIES FOR LOCATING INFORMATION

Activities that teach students how to locate information should be linked to the content of student textbooks and other school materials. Although there are many commercial workbooks that provide exercises in developing such skills, these activities can't be as effective as ones that require "hands-on" experiences. The school librarian/media specialist can be a valuable resource especially with bibliographic instruction, and it is suggested that a cooperative effort be established when library instruction is undertaken with students.

1. Improving alphabetical sequencing (Primary)
   The following activities can be used to teach sequencing (Lapp & Flood, 1978):
   a. Introduce the letters of the alphabet in sequential order.
   b. Write the alphabet on the board and ask students to supply the missing letters.
      a, b, ___, ___, e, ___, g, h, ___, ___, ___, l, ___, n, ___, p, q, ___, ___, ___, u, ___, w, ___, y, ___
   c. Supply word lists and ask students to alphabetize them.

any	run	see
car	the	boy
toy	is	girl
bat	we	mother
dog	us	top

   d. Supply word lists that will have to be alphabetized by the first and second letters.

and	boy	cat	fun	top
all	big	city	father	tip

   e. Supply word lists that will have to be alphabetized by the first, second, third and fourth letters.

and	baby	ran	hail	street
ant	base	rang	hair	strong

   f. Have each student record the time it takes to perform the task of locating the information (word), trying to reduce the time with each successive practice session. A list of 10 to 20 assorted words can be placed on the board. At a signal, all start using their dictionaries to locate each word. As each word is located, the student writes down the page number and the word that precedes the one being sought. As each student finishes the list, he or she looks up and copies a number that the teacher has been changing every 15 seconds. The student's number, divided by four, is the number of minutes it took that child to complete the task.

g. Arrange these letters in alphabetical order.
v, w, n, k, b ___ ___ ___ ___ ___
g, t, s, j, p ___ ___ ___ ___ ___
m, b, p, e, t ___ ___ ___ ___ ___

h. Have a group of students design a class telephone directory that includes the name, address, and telephone number of each student. The last names of the students must be placed in alphabetical order. Guide words for a page would be the first student's surname and the last student's surname appearing on each page.

Peters	Pike	Pike	Puckett
_____	_____	Pike, Sue	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	Pike, Pete	_____	Puckett, Paul

2. Becoming familiar with book parts (Intermediate)

The following activities can be employed to help students learn to use book parts.

a. Listed below are topics found in an index of a book on Egypt. Use the index to answer the questions that follow (Harris & Smith, 1976):

Alphabet, 31
Art, 15-17, 75, 76
 ancient, 43-45
 recent, 113-115
 in tombs, 45
Cairo, 13, 19-21, 25
 burning of (1952), 70
 government of, 140
Customs, 5, 57-59
Food, 48, 51
Islam, 99
Moslems, 95-98
 creed, 97
 laws of, 101
Nasser, Gamal Abdel, 117-121
 early life of, 117
 personality of 123-125
Sports, 132-133
Villages, 17, 43, 83

On what page or pages in the book will you read about these topics?

1. Islam ___
2. Moslems ___
3. Sports ___
4. Early life of Nasser ___
5. Food ___
6. Burning of Cairo ___
7. Customs ___
8. Moslem laws ___

How many pages deal with these topics?

1. Food ___
2. Ancient art ___
3. Customs ___
4. Nasser ___

b. Have each student make his/her own index to any book, comic book, or magazine, and then devise questions for a classmate to answer. The questions should require the use of the index. Classmates score two points for each question answered correctly (the index maker is the judge), and the first to score 10 wins.

c. Consider another approach for teaching the use of an index.

(1) Provide students with a set of problems they want to solve. For example:

(a) How did musical instruments originate?

(b) Who is Arthur Fiedler?

(c) Where is the greatest amount of wheat harvested?

(d) Where is the Amazon River located?

(2) After developing the problems, encourage the students to delineate the information to be found. For example:

(a) musical instruments, origins

(b) Arthur Fiedler

(c) wheat

(d) Amazon River

(3) Have students select a text which may contain the information they are seeking. For example, a music text and social studies text would be appropriate for answering the initial questions.

(4) Once a text has been selected, have students survey the index to determine

(a) if entries are listed alphabetically,

(b) if topics, symbols, and names are all part of one index,

(c) the meanings of any abbreviations,

(d) the purpose of using commas and dashes in entries,

(e) the meaning of words in italics,

(f) if desired information is contained

d. In helping students understand the purpose of a glossary, have students make up a science fiction or other type of story using any kind of made-up words, no matter how ridiculous. This activity can be done in conjunction with a creative writing activity. After the stories are written, have students make up a glossary for the "unfamiliar" words. They should then exchange stories and ask questions about the new words.

3. Improving dictionary skills (Lapp & Flood, 1978) (Intermediate)

a. Choose a volunteer who looks up 10 to 15 words in the dictionary and notes the page, column number, and guide words. Have a contest to see who can look up words the quickest. The teacher calls out a word, and the first person in the group to find the word shouts, "I've got it" and reads the page number, column, and guide words he/she used. Each person to find a word the fastest scores one point. The highest score, when all the words have been used, wins.

b. Have the teacher and students write questions containing unfamiliar words on 3 x 5-inch cards. For example: What does a sloth look like? Students are then grouped into two teams. Team A begins by selecting a card, reading it to Team B, and asking "Can you answer that?" Team B must look up the unfamiliar word in a dictionary, answer the question, and verbally state the two guide words taken from the dictionary page on which the answer was found.

c. Write jokes, stories, or sentences using only diacritical marks. The student translates the joke, story, or sentence and then copies the translation on paper or records it on tape.

Example: the floúar blooms
the ski iz sun′ e
it iz Spring

d. Have students write a word or phrase from a foreign language on a 3 x 5-inch card. Beside each word or phrase, they write its phonetic pronunciation, using the diacritical marking of English sounds. In turn, another student draws a card and attempts to pronounce the word written on it. If the student pronounces the word correctly, he/she has the opportunity to draw a second card. If the student is incorrect, the card is simply returned to the deck and the next student draws. The game continues until all cards have been successfully drawn. When this occurs, the student with the most cards wins.

ex. auf Wiedersehen ouf vedar-za′ n

e. Assist students in utilizing accents as an aid in word pronunciation by making 5 x 8-inch word cards containing words that are spelled the same, but pronounced differently (heteronyms). Be sure to include the accent marks for each word.

cońtent conteńt	preśent preseńt

Flash the cards and ask the students to write sentences correctly using each word.

f. Provide students practice in using a thesaurus. Give each student a simple sentence or one containing new vocabulary words. The student, using the thesaurus, must rewrite the sentence in several different ways, keeping the original meaning.

The knife can *cut.*
The knife can *carve.*
The knife can *dissect.*
The knife can *slice.*
The knife can *sever.*
The knife can *separate.*

4. Cataloging classroom library books (Primary)
   a. Catalog books housed in the reading corner with a system devised by the class. Non-fiction and fiction books might be separated and then alphabetized by author. All books written by authors whose names begin with A could be numbered (1A, 2A, 3A and so on), the same numbering system could be used for books by authors whose names begin with B. Books might be grouped by geographic location of setting, type of story, or even reading difficulty. The number assigned to a book (1A, 3B, and so on) would also be written on appropriate cards in the catalog and would be noted on the spine of the book.
   b. Note that the books housed in the reading corner can each be identified by author, title, and subject on a 3 x 5-inch card. As a first step students can be asked to decide how the cards might be arranged for easy retrieval. Alphabetizing the cards by author's name is a handy technique and entirely satisfactory as a first step. Later, students will discover that searching their card catalog for an author is satisfactory only when the author of a book is known. Occasionally, only a title is known. The suggestion should be made - hopefully by a student - that a second set of cards, alphabetically filed by book title, might be added to the catalog.

      Subject cards can be added when students are ready for that kind of classification. The fact that several subject cards might be made for the same book is a significant discovery for children to make; this helps them understand the complexity of indexing. The suggestion can also be made - by the teacher if necessary - that brief summaries or annotations added to the cards would be helpful to someone who finds an interesting title but wonders about the exact nature of the story or the difficulty of the book.

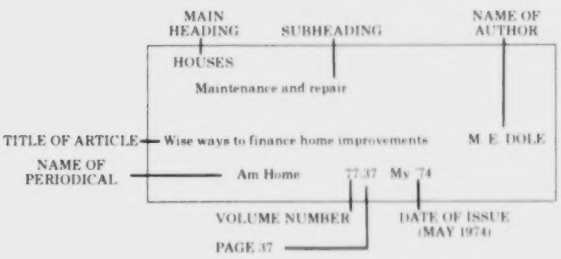
      Using this approach, a fairly sophisticated card catalog can be evolved by the children themselves by the fourth grade. Some children will then be ready to learn about the card catalog in their school and public libraries. (Some children may be ready for this step as early as Grade 2. This sequence of steps illustrates only one possible approach. Other approaches, and especially other chronologies, will be appropriate in a variety of situations.)

c. Initiate the activity called "Finding a Book" in the library or classroom. There should be a good supply of books labeled with call numbers, as well as a card catalog which could also be constructed by the teacher, if necessary. Put the call number, title, author, number of pages, and a short description on the cards. There should be duplicate cards so that the student can locate the book using the title, author or subject. Prepare a grab bag containing index cards that say "Find a book written by..." or "Find a book about elephants." Students must use the catalog and then present the books to the scorekeeper, who gives five points for each card completed correctly. The first person to complete five cards correctly, wins.

d. Provide students with exercises that give students practice in arranging call numbers as they would be found on the library shelf.

770	621	804
C223d	A41j	Z12b
721	672	804
I46c	P925m	L17t

5. Using the Reader's Guide to Periodical Literature (Intermediate and Senior)



a. Reproduce several entries from the Reader's Guide on transparencies. Project on a screen and ask individuals to come and identify title, author, journal, date, heading, subheading, and so forth.

b. Reproduce an entry on a piece of poster board. Mark title, author, and so forth and discuss the function of each segment of the entry.

c. Select several topics from a number of Reader's Guides for which there are no headings using the same words or for which comparatively little information is available. Have students suggest alternate headings.

6. Checking the reliability of books and other materials (Ross, 1981) (Intermediate and Senior)

a. Authors' qualifications

(1) Let students compare the authors of two books about, for example, reptiles. Ask them to decide who would be the best or least qualified.

(2) Select a topic about which a few class members are knowledgeable because of personal experiences. Ask all students to write on the topic, then let them predict which reports are most likely to be accurate. Lead them to discover that students with the most experience are apt to provide the most accurate information.

b. Author's bias

(1) Compare news stories with editorials, and compare editorials in different newspapers. Encourage students to look for the editor's point of view.

(2) Assign students to write about the same subject from different points of view. Compare the reports and let students tell the writer's purpose.

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c. Type of publication and date

(1) Have students find as many sources as possible on a topic and look for contradictory material. Ask them to evaluate these sources in terms of the authors' competence, dates of publication, types of publication and publishers' reputation.

(2) Have students compare old and new books. Encourage them to find additional information that has been included in the new books, maps with different boundaries, or scientific information in the old books that is contradicted in the more recent books.

DEWEY DECIMAL CLASSIFICATION SYSTEM

The Dewey system divides all knowledge into ten broad subject areas or classes, and assigns numbers to them. Each major class can then be divided into ten smaller classes or subclasses. Each of the subclasses can also be divided into ten smaller classes.

Thus, the smallest number (500 for example) represents the broadest subject area, and as the numbers get larger and longer (555.45), the subject becomes more specific. For example:

Call number — 894.31
S64f

894.31—identifies the subject area of class of book
S —the first letter in the author's last name
64 —further identifies the author
f —the first letter in the first word of the title which is not "a," "an," or "the."

After the book receives its call number, it is placed on the shelves numerically by numbers in the call number and alphabetically by the letters in the call number.

Dewey Decimal Classification System broad subject areas or classes:

000 Generalities
100 Philosophy and Related Disciplines
200 Religion
300 The Social Studies
400 Language
500 Pure Sciences
600 Technology (Applied Sciences)
700 The Arts
800 Literature and Rhetoric
900 General Geography and History, etc.

Each class can be subdivided into smaller classes or subclasses:

500 Pure Sciences
510 Mathematics
520 Astronomy
530 Physics
540 Chemistry
550 Earth Sciences
560 Paleontology
570 Anthropology
580 Botanical Sciences
590 Zoological Sciences

The subclasses can be further subdivided into smaller subclasses:

600 Technology
610 Medical Sciences
620 Engineering
630 Agriculture
635 Horticulture
635.9 Floriculture
635.91 Production

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LIBRARY OF CONGRESS CLASSIFICATION SYSTEM

The call number of a book consists of the letter (or letters) representing the broad subject area or subtopic the book covers and a series of numbers and letters that further identifies the book. Refer to the example below; the book has a call number L325.D68. L indicates that the book is on the subject of education. 325.D68 is the unique book number which identifies that particular title.

Call number: L 325.D68
- L —identifies the broad subject area
- 325—further identifies the subject
- D —the first letter of the author's last name
- 68 —a number which further identifies the author

After a book receives its call number, it is placed on the shelves first alphabetically by the broad subject area letter(s) and then numerically by the author's letter and number.

- A General Works
- B Philosophy & Religion
  - BD Metaphysics
  - BF Psychology
  - BJ Ethics
  - BM Judaism
  - BR Christianity
- C History (General — Civilization, Genealogy)
- D History — Old World
  - DA Great Britain
  - DC France
  - DE Classical antiquity
  - DF Greece
  - DK Russia
  - DS Asia
  - DT Africa
- E American History & General U.S. History
- F American History (local) & Latin American History
- G Geography, Anthropology, Folklore, Sports, & Others
- H Social Sciences
  - HA Statistics
  - HB-HD Economics
  - HF Commerce
  - HG-HJ Finance
  - HM Sociology
  - HQ Family, marriage, home
  - HV Social pathology
- J Political Science
- K Law
- L Education
- M Music
- N Fine Arts
  - NA Architecture
  - NB Sculpture
  - ND Painting
- P Language & Literature
  - PA Classical language & literature
  - PB Celtic language
  - PC Romance language
  - PD Germanic language
  - PE English language
  - PN Literary history & collections
  - PQ Romance literature
  - PR English literature
  - PS American literature
  - PT Teutonic literature
  - PZ Fiction & juvenile literature
- Q Science
  - QA Mathematics
  - QB Astronomy
  - QC Physics
  - QD Chemistry
  - QE Geology
  - QH Natural history
  - QK Botany
  - QL Zoology
  - QM Human anatomy
  - QP Physiology
  - QR Bacteriology
- R Medicine
  - RD Surgery
  - RS Pharmacy
  - RT Nursing
- S Agriculture, Forestry, Animal Culture, Fish Culture, Hunting
- T Technology
- U Military Science, Naval Science
- Z Bibliography and Library Science

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SECTION 2: ORGANIZING INFORMATION

INTRODUCTION

Understanding of information is greatly enhanced as a reader recognizes how written material is organized. Skills such as outlining, notetaking, and summarizing are extremely useful for students attempting to retain essential information from text. As students become more practiced in organizational skills, their ability to see relationships among the author's ideas improves because they are being asked to create or re-create organizational patterns themselves. Eventually, students begin to impose their own organization on the content that is studied.

STUDENT COMPETENCIES FOR ORGANIZING INFORMATION

Student competencies at the primary level (K-3)

- Students use given categories in sorting information.
- Students develop their own categories in sorting information.
- Students recognize that written information is sequenced.
- Students determine what is essential and non-essential in stories.

Student competencies at the intermediate level (4-8)

- Students categorize terms into superordinate, subordinate, and equal status relationships.
- Students understand the purposes of paragraphs and recognize their various organizational patterns.
- Students identify the main idea of a text.
- Students develop a working knowledge of the following elaboration strategies: 1) outlining; 2) summarization; and 3) notetaking.

Student competencies at the senior level (9-12)

- Students practice an elaboration activity as a regular part of their reading strategies for content material.

SKILL DEVELOPMENT IN ORGANIZING INFORMATION

Developing categorization and sequencing skills

The foundation for learning to organize information begins at the primary grade level, since children develop a sense of order and organization at an early age. Prior to any exposure to formalized instruction in organizing information, primary grade students should be provided numerous opportunities to categorize and sequence information.

Categorizing means relating what is new to what is already known by placing it with like pieces of information and by reducing the volume of the material to a more manageable size for remembering. Without this ability to categorize, recall of information would be very difficult. Smith and Elliott (1979) suggest that students' placement system can be developed and improved by first identifying categories they can use for sorting information and, second, by encouraging them to develop their own categories.

Sequencing, as it relates to reading, refers to the order in which ideas are presented. Written information is often expressed through three basic patterns of sequence: chronological, spatial, and expository (Burmeister, 1978).

A chronological pattern is simply time order and can be represented by several writing patterns:

1. Beginning to end (first, second, third, fourth, etc.)
2. Reverse time order (fifth, fourth, third, etc.)
3. Flashback (end is given first, then a beginning to end sequence)

Outlines, flowcharts, timelines or tree charts are good visual representations of chronological patterns.

In spatial order, or descriptive order, the pattern of discussion is from area to area, or region to region. For example: in describing a castle, a historical writer might start with the gate, move to the outer courtyard and then into the castle, and then proceed from room to room until each area was covered. Similarly, a description of the major geological formations found in the United States may start in the East, move down the coast to the South, then up through the Plains of the Midwest, and finally into the West. Outlines, sketches, maps, floor plans, etc., are formats that can be used to aid readers as they read spatially oriented material.

Expository writing seeks to explain or give information. It presents facts, definitions, comparisons, contrasts, and patterns of explanation such as cause to effect, effect to cause, question to answer, general statement to details (deduction), details to general statement (induction), etc. Mark Aulls (1978) states, "The essence of expository writing is to explain a series of main ideas. The sum of what students learn is each main idea and the cumulative relationship between the ideas presented paragraph by paragraph." (p. 91) Outlining is the most common activity to use in teaching expository sequencing; however, visual patterns such as charts and graphs can also be very useful.

Understanding the use of paragraphs

During the intermediate grades, students need to become increasingly sensitive to paragraph usage in expository writing. When students understand the purposes of paragraphs, they have a better ability to understand the author's organization of ideas, and to grasp meaning. Teachers can assist students by pointing out examples of these paragraph patterns as they are encountered in reading assignments. To aid the teacher in identifying the various patterns, a brief description of each is given below.

1. *Introductory statement*—Introductory statements are found at the beginning of a selection. They usually give the author's purpose or a preview of the selection's content to prepare the reader for what lies ahead in the selection. By using introductory statements as guides to reading, the reader comprehends the intention and exact meaning that the author is trying to convey.
2. *Paragraphs of definition*—These paragraphs develop concepts or define technical terms. This type of paragraph is especially important to future understanding of the text, because when the terms are used again, it is often assumed that the concepts are known to the reader.
3. *Principle explained by illustration*—Paragraphs—and longer selections—are often organized in terms of a principle or a process supported by one or more illustrations.
4. *Associating text with pictorial illustrations*—In reading, it is frequently necessary to associate the textual discussion with graphic aids such as maps, graphs and other forms of pictorial illustrations.
5. *Comparison and contrast*—Another technique used by writers in composing paragraphs is to present comparisons and contrasts which clarify the significant points that the author intends to make.
6. *Cause and effect*—The interpretation of many paragraphs relies upon the student's recognition of relationships between cause and effect situations.

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7. *Problem solution*—Many selections make the reader aware of a problem, then examine the evidence concerning the problem, and give the author's solution. The reader may formulate his or her own conclusions. In understanding problems presented by the author, it is often necessary for the reader to span more than one paragraph to grasp meaning.
8. *Events in chronological order*—In grasping the meaning of a selection, it is often important for the reader to be able to place an event in time, to know when it occurred in relation to other events, or to recognize the time order of a series of events.
9. *Enumeration or summary*—Paragraphs sometimes enumerate or sum up a number of ideas. This type of paragraph is usually found at the end of chapters, but may also occur at any other point where it is desirable to list a number of details.

Signal words (see below) are words that key the reader to paragraph organization. Students need to be made aware of these words as they are introduced to paragraph patterns.

SIGNAL WORDS FOR PARAGRAPH PATTERNS

LISTING PATTERN

the following
then
another
finally
moreover
besides
next
first
second
third
also
in addition
furthermore
likewise
as well as
and
many
much
some
several
lastly

SEQUENCE PATTERN

first
second
third
last
soon
at last
then
now
immediately
ago
at that time
subsequently
until
while
meanwhile
already
next
after
during
in the meantime
afterwards

CAUSE/EFFECT PATTERN

for this reason
in order to
since
because
so that
therefore
on account of
hence
thus
consequently
accordingly
as a result
so
so that
it follows that

COMPARISON/CONTRAST PATTERN

even though
but
however
yet
otherwise
although
on the other hand
despite
still
on the contrary
nevertheless
notwithstanding
rather
not
in spite of
in comparison
conversely

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The following are examples of paragraph patterns and signal words:

1. The contest started as a passing duel between the quarterbacks for Penn State and Ohio State. In the second quarter, Penn State returned two pass interceptions for touchdowns. Then the Buckeyes passed for a touchdown in the third quarter and tied the game in the final quarter.

   Paragraph Pattern: sequence

   Signal Words: second, then, third, final

2. Hurricane Hannah raged up the Atlantic Coast with winds at over a hundred miles an hour. Because of her force, waves swept in over exposed beaches, washing away the flimsy beach cottages and forcing holiday occupants to flee.

   Paragraph Pattern: cause/effect

   Signal Words: because

3. Inside a museum in Istanbul, visitors may see the sultan's peacock throne. Surrounding it are cases filled with jewels, one of them an enormous emerald. Outside, however, human beasts of burden still bend under loads so big the bearer can hardly be seen.

   Paragraph Pattern: comparison/contrast

   Signal Words: inside, outside

Identifying main idea

One goal of any textbook reading assignment is to acquire the main idea(s) of the selection, but many students have trouble in selecting a main idea from expository material. To overcome this difficulty, students must be provided with enough opportunities to acquire skills in identifying topical structure and stated main ideas in expository material (Aulls, 1978).

Initially, it is important for a reader to distinguish between the main idea and a topic sentence of a paragraph. A topic sentence simply alerts the reader to the nature of the material, whereas a main idea in a paragraph signals to the reader the most important statement the writer has presented to explain the topic (Aulls, 1978). A main idea may occur at any point in a paragraph, and it can be implied rather than explicitly stated.

Teaching the concept of main idea should begin in the primary grades, but prior to its introduction, determine if students can categorize terms into superordinate, subordinate, and equal status relationships. Once students attain these categorical concepts, instruction should proceed as follows:

1. Students should be exposed to simple paragraphs first and then build toward more complex paragraphs.
2. Activities should be developed that provide students with experience in locating the main idea in various parts of the paragraph.
   a. A majority of expository paragraphs are written with the main idea as an introductory sentence with the remainder of the paragraph consisting of supporting detail.

      Example:

      Niagara Falls has an irresistible lure for daredevils. A motley procession of foolhardy men have dared death by dancing about the chasm on a tightrope or plunging over the cataract in a barrel. They have tried to swim the current and to shoot the rapids in boats.

   b. The main idea also may be found as a summary sentence.

      Example:

      Costs were low that year and the output high. There was a good man for every job, and the market remained firm. There were no losses by fire. *All in all it was the best year in the company's history.*

   c. The main idea may be found at both the beginning and end of a paragraph.

      Example:

      Penicillin is one of the greatest of the wonder drugs. It has saved thousands of lives already and will save many more in the future. But it has no effect whatever on the bulk of the ills of man and of beast. *Good as it is, it is certainly not a cure-all.*

d. The main idea may be found in the middle of the paragraph.

Example:

There are deer in abundance here. *The whole area is great country for hunters and fishermen.* There are bears, occasional mountain lions, and coyotes. To the east there are streams full of trout, and there are ducks, geese, and a few pheasants.

e. Also, the main idea may be implicitly stated which means that the main idea is implied rather than expressly stated.

Example:

The range of the mule deer is usually east of the Sierra Nevadas. It is the largest of the North American deer, sometimes weighing almost 400 pounds. The name has been given to the species because of the long ears and the mule-like tail. Owing to its rather large antlers, it is a valuable game animal.

(In this paragraph the reader concludes that the main idea, although not stated, is the characteristics of the mule deer.)

Only after students have had extensive practice in successfully locating the main idea in a paragraph should outlining be introduced.

Developing outlining skills

Outlining skills help students discover an author's organization, recognize main ideas and details, and record information. If students are to be successful in outlining, they must be able to understand the content that is to be outlined and grasp the relationships among the ideas involved. Again, it must be stressed that students should have a solid foundation in classifying/categorizing information and locating the main idea prior to beginning work on outlining skills.

Bruner and Campbell (1978) suggest teaching outlining skills by first making students aware of the general structure of textbooks and thus indicating the different levels of subordination of information. They recommend the following activity to show students the overall structure of a text and how the ideas developed by the author follow a specific plan. This activity also shows how one point of information, the main idea, fits into the total structure of the text.

First, use an overhead projector or a chalkboard to display graphically the organizational scheme of the content text.

Textbook Title
Unit Title
Chapter Title
Topic Heading
Paragraph
Main Idea

Then, provide a worksheet for students with the above organizational scheme. Ask the students a series of questions to help them discover the organization of a text.

1. What is the title of the text?
2. Write the name of a unit of the text. If your text is not divided into units, proceed to the next question.
3. Write the title of a chapter.
4. Turn to this chapter in your text. How many sections are in this chapter? Write the name of one chapter section.
5. Write the name of one topic in this chapter section.
6. Read a paragraph in this topic. Write the main idea of this paragraph.

A student's worksheet would look like:

Text title.....Man's Unfinished Journal
Unit .....World Wars & Totalitarianism
Chapter .....World War I
Topic ..... Factors Leading to War
Subchapter ..... Spanish Civil War
Main Idea .....Franco's victory was a victory for facism

Once students have become familiar with the basic organization of their textbooks, the concept of outlining material someone else has written should be introduced in stages.

Stage 1

Provide students with an outline that is complete through the first three levels of subordination. Their task at this stage is to compare the outline with the text, noting form and relation among the elements of the chapter.

ANCIENT CULTURES IN THE RIVER VALLEYS

I. The Tigris-Euphrates River Valley.
   A. Conditions in the valley which promoted settlement.
      1. Rich soil (silt) provided by the flooding waters.
      2. Rivers providing moisture for dry land.
   B. The Sumerians first to live in the valley.
      1. Developed good water control system.
      2. Irrigated dry land.
      3. Built cities of sun-dried bricks.
      4. Food surpluses leading way to specialization.
      5. A way of writing developed.
      6. Conquering of Sumerians by Semites.

II. The Nile Flood Plain of Egypt.
   A. Physical features of the region.
      1. Little rainfall in Egypt.
      2. Land covered with silt from flooding river.
      3. Source of Nile River in mountains of central Africa.
   B. Economic importance of Nile.

Stage 2
The second stage in this procedure is to provide students with an outline that contains main ideas for major sections and an enumeration of the supporting points to be found under each main idea. The students must provide the information that is missing from the outline.

BELLS

I. Uses of bells.
   A.
   B.
      1. Proclaim good news.
      2. Warning of disaster.

II. Materials used in making bells.
   A.
   B.
   C.
   D. Metal
      1.
      2.

III. Production of sounds.
   A.
   B.

Stage 3
The third stage in this procedure is to provide students with an outline that contains only an enumeration for major topics and subtopics. The student must complete the information that has been omitted.

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ACUPUNCTURE

I. The benefits of this procedure.
   A.
      1.
      2.
      3.
      4.
   B.
      1.
      2.
      3.
II. Reasons for its success.
   A.
   B.
   C.
III. The process of acupuncture.
   A.
   B.

Stage 4
Next, students can supply all the topics for an outline. Only the form of the outline is provided with the number of points in each section indicated.

CULTURAL HERITAGES FROM THE MIDDLE AGES

I.
   A.
      1.
      2.
      3.
   B.
      1.
      2.
II.
   A.
      1.
      2.
   B.
      1.
      2.

Stage 5
After students have been led step-by-step through the elements of outlining, they should be ready to attempt an entire selection on their own.

Whether a sentence outline or a topic outline is composed depends on how the outline is to be used and the time span in which it is going to be used. Here is a good rule of thumb: If there is going to be a great deal of time lapse between when the outline is written and when it is used for study, a sentence outline would be more appropriate, since this type of outline contains more information to key a reader's memory. On the other hand, a topic outline is also very useful for study purposes. If at all possible, students should not use a mixed format especially when outlining is first learned.

Developing summarization skills
Summarizing what one reads is a basic study skill that requires careful, thoughtful reading. Through summarization one selects essential material, deletes peripheral material and rearranges and prioritizes material in a manner different from its source.

1. Reasons for using summarization:
   a. Focuses attention on key concepts
   b. Helps organize thoughts
   c. Promotes recognition of detail
   d. Provides an automatic review of materials
   e. Increases motivation

   As with other organizational skills, opportunities to summarize should be provided early in the curriculum.
2. Several suggested primary activities include the following:
   a. Ask children to recount the incidents from a story in their basal readers.
   b. Plan a day trip to the zoo, museum, firehouse, etc., and discuss with the children what would be the most important things to look for.
   c. Develop through group discussion activities, experience stories which are recorded by the teacher.

These types of activities give children opportunities to decide what is important by stating ideas clearly and arranging them in a proper sequence. They also help children determine essential and nonessential information.

In the intermediate grades, students should be presented with more formalized opportunities to improve their summarization skills. Practice in summarizing is most effective if the material being summarized is taken from textbooks the students are currently studying or from other resources that they are expected to read in connection with classwork.

3. Several prerequisites should be established:
   a. Students must possess the ability to locate the main idea.
   b. Students must understand the material in order to write a good summary of it.

   At first, have students summarize easy paragraphs and then progress into more complex paragraphs. Then, introduce the summarization of longer selections by having students locate the main ideas of various paragraphs and combine these ideas into a summary statement.
4. Additional activities that can be used to develop summarization skills are as follows:
   a. Cut articles from the newspaper and give them to students without the headlines. Have students read the article and write a headline for it. Then have them compare their headlines with the newspaper's.
   b. Give students a section of the textbook to read and 3 or 4 summaries of the material. Ask students to choose the best summary from those presented and ask them to tell why the other summaries were not as good. This activity serves as a good preparation for the independent writing of summaries by students.

Developing notetaking skills

Notetaking is the culminating skill in organizing information. Taking good reading notes requires that a student have a good foundation in both summarizing and outlining skills. Such notetaking also demands selective, thoughtful reading which involves a good deal of reader judgment. A student must be able to choose the major ideas from a selection, decide what is worth recording, and state an author's ideas in a condensed but accurate form (Heilman, 1978).

In addition to reading notes, students must also learn to take lecture notes. Good listening abilities are a necessity for taking effective lecture notes because students must evaluate information by judging whether or not it is relevant. Choices must be made regarding the importance of the information, and how it might fit in with other information that has been collected.

In good notes, information is organized so that it can be referred to easily. Several features are found in good notes:

1. Information is in block form.
   Space is left between each separate idea or group of related points of information. The more space left between blocks of information, the more room is available to add other information.
2. A wide space is left on the left side of the page.
   The wide left margin is used for writing questions or adding other pieces of key information. Wide margins cover about one-third of the width of a page.
3. Page number, date and subject name are included.
   Numbering each page of one's notes often saves a great deal of time during studying. The date helps relate the notes to a course outline.

SAMPLE READING NOTES

WIDE SPACE FOR QUESTIONS	BLOCKS OF INFORMATION	DATE, PAGE CLASS
What is the early history of the labor movement?	Labor Movement • Began in U.S. • 1880's • slow growth because of movement west—high demand for labor in each	American History 1/20
What was the Knights of Labor?	Knights of Labor • organized to help workers • fought for higher wages, shorter hours • rapid growth, 700,000 workers in 1886 • strikes lead to decline • disappeared by 1900	

In taking notes, the following suggestions should prove helpful to students.

1. Encourage students to use a large loose-leaf notebook which preferably can accommodate 8½" x 11" paper. This has an advantage over a spiral notebook in that pages or handouts can be added in the proper topical or chronological order.
2. Have students take notes on one side of the page only. This practice will facilitate review because students can put the sheets of notes out flat on a desk or table and get a general view of the concepts included in the notes. Writing on only one side of the paper eliminates the distraction of continually flipping the notes over during study sessions.
3. Have students draw a vertical line about 2½ inches from the left edge of each sheet that will be used for notetaking. Record class notes to the right of the line and key words or questions to the left. The latter will serve as quick reference guides and make students aware of the main points or topics.

2½"	6"
Reduce ideas and facts to concise jottings, summaries or key words.	Record reading or lecture notes as fully and as meaningfully as possible.

4. Request that students take notes in ink. Notes taken in pencil smudge and become illegible with frequent handling.
5. Encourage students to summarize the reading or lecture presentation in their own words.
6. Help students revise, coordinate and reorganize their notes from readings and lectures. Combining notes from various sources contributes to effective study.
7. Have students, when reviewing notes, cover up the right side of the note sheet and recite or summarize the ideas as fully as they can from the "leads" or questions provided by the exposed left portion. See illustration below.

USING NOTES FOR REVIEW

What is the early history of the labor movement? What was the Knights of Labor?	**LABOR MOVEMENT** 1. Cover information when reviewing notes. 2. Use questions or key words on left hand column to help elicit responses

Another adaptation of the above notetaking format is the Key and Summary Method of taking notes (Bruner and Campbell, 1978). Introduce this procedure as a class activity so the students can see how to develop notes.

1. Have students set up their note paper in the following manner.

KEY WORDS	TOPIC	SUMMARY

2. Place notes made during reading in the middle column.

KEY WORDS	TOPIC	SUMMARY
	Tigris-Euphrates River Valley • Conditions that promoted settlement — rich soil — rivers providing irrigation • Sumerians—first inhabitants — developed water control system — built cities — developed a way of writing	

3. Reread notes to develop a key word(s) for each major section of notes. This key word will help recall the information in the body of notes. There are no right or wrong key words. The words should have meaning for the individual and relate to the topic.

KEY WORDS	TOPIC	SUMMARY
conditions Sumerians	Tigris-Euphrates River Valley • Conditions that promoted settlement — rich soil — rivers providing irrigation • Sumerians—first inhabitants — developed water control system — built cities — developed a way of writing	

4. Fill in the summary column after the notes have been taken and key words developed. To complete this section, the notebook paper is turned to the left so that the summary column is at the top. The students summarize the information in a few sentences.

KEY WORDS	TOPIC	SUMMARY
conditions Sumerians	Tigris-Euphrates River Valley • Conditions that promoted settlement — rich soil — rivers providing irrigation • Sumerians—first inhabitants — developed water control system — built cities — developed a way of writing	Rich soils and the ability to irrigate were important factors in the settlement of the Tigris-Euphrates Valley. Sumerians, the first inhabitants, were responsible for much of the early development.

To reemphasize what was stated earlier, notetaking is a fairly difficult study skill to master. Students are often told of its advantages as an aid for recalling or remembering information, but little demand is made on students to take lecture or reading notes as part of their daily assignments. It is important that students learn a form of notetaking and that they be required to practice it as a part of their reading of content material.

Sample Outline Form

I. Main Idea

A. Detail supporting I.

B. Detail supporting I.

1. Detail supporting B.

2. Detail supporting B.

II. Main Idea

A. Detail supporting II.

B. Detail supporting II.

C. Detail supporting II.

1. Detail supporting C.

2. Detail supporting C.

III. Main Idea, etc.

SECTION 3: RECALLING INFORMATION

INTRODUCTION

In this section, the recall of information through the questioning process is explored. This process is viewed not as an evaluative measure but as a means to improve student thinking skills. Specifically, the recall of information is aided greatly by

1. The teacher's ability to ask questions that help students gain a better understanding of content.
2. The student's ability to respond appropriately to the type of question asked.
3. The student's use of techniques that aid in the retention of information.

Additionally, several questioning models that encourage the development of thinking skills are presented.

STUDENT COMPETENCIES FOR RECALLING INFORMATION

Student competencies at the primary level (K-3)

- Students recognize that some questions require different sources of information for appropriate answers.
- Students use questions to help generate interest and motivation in reading.

Student competencies at the intermediate level (4-8)

- Students employ organized reading-study strategies to aid in the recall of information.

Student competencies at the senior level (9-12)

- Students continue exhibiting the ability to generate their own questions prior to reading.
- Students continue employing strategies that aid in the recall of information.

SKILL DEVELOPMENT IN RECALLING INFORMATION

Improving questioning techniques

Questions are more effective when they are used as a means to guide students through levels of thinking. Teachers must be aware that there are different types of questions which require different responses. Also, it is important that teachers know how to sequence questions in order to improve students' thinking.

1. Types of questions
   Questions can be classified as either narrow or broad questions depending upon the response requirements that they make. Stimulating student thinking requires teachers to ask a range of questions instead of just one kind of question. A continuum of questions can be illustrated as follows:

Recognition or recall of facts, concepts information	Convergence of concepts	Divergence from concepts	Evaluation of facts, information, concepts, situation
narrowest questions			broadest questions

(Lapp and Flood, 1978)

a. Narrow questions

(1) Cognitive memory questions.

These questions require recognition or recall of facts, concepts and specific information. The answers to these questions are predictable and limited, and usually are contained in the text. Many of these questions start with words such as: who, what, where, when, how, and why. In addition, other terms which signal a limited response are as follows: how much, how many, how often, define, tell, list, and name. In answering these questions, students learn to restate as precisely as they can the exact words from the text. The purpose is to help the student gather information that is deemed useful or identify, group, or review relationships between statements and events (Aulls, 1978).

(2) Convergent questions

Convergent questions have one best answer but are broader than cognitive memory questions because they require the student to put facts together to construct an answer. These types of questions are typically found in textbooks because they lend themselves well to expository material. In answering these types of questions, the student needs to have the following reasoning skills (Aulls, 1978):

(a) Explaining

(b) Identifying and interpreting relationships

(c) Comparing and contrasting

(d) Hypothesizing about causes or effects

Narrow questions provide students with only a literal understanding of the material and do not demand that students engage in any higher level thinking. In many classes, students are exposed to only this line of questioning and are never given enough opportunities to expand their thinking skills further. The real value of literal understanding is that it serves as a stepping stone to higher level thinking and not, as it is so often used, as a measure of understanding.

b. Broad questions

These questions require the reader to make inferences about information through deductive or inductive thinking in order to react to the content of a text, or to create new ideas from it. Unlike responses to narrow questions, responses to broad questions can be varied and unpredictable. The purpose of a broad question is to encourage students to become more independent and diverse in using or reacting to information that is stated or implied in written material (Aulls, 1978).

(1) Divergent questions

Divergent questions usually require the student to imagine, predict, reconstruct, or hypothesize. In order to answer a divergent question, the student must go beyond information stated in the text and predict or hypothesize according to his or her own knowledge. These types of questions involve students personally by having them explore the information as it might affect them or how it might be used in another context or situation. As a result of answering these questions, students develop new ideas or gain another perspective on the material.

One condition that must be understood by both teachers and students when divergent questions are used is that a variety of acceptable answers may be applicable. Also, teachers need to allow more time for students to respond to current questions because answering such questions appropriately requires some thought.

(2) Evaluative questions

The second type of broad question is the evaluative question. These questions elicit opinions, values, defenses of a position, or justification of a judgment. Signal words for evaluative questions are "In your opinion...," "What do you think?," "Evaluate...," "Choose the major events leading up to...," and "Justify or defend your decisions about the writer's purpose for..." When using evaluative questions, the teacher must understand that these questions can have properties of both broad and narrow questions. For example, if the question asked for a student's opinion, then any response that the student gives can be deemed acceptable. But if the evaluative question asked for a judgment on the student's part, then the response needs to be assessed in light of justifiable criteria that have been used to make the judgment. In this sense, the evaluative question has a more restrictive range of appropriate answers, thus being similar in nature to a narrow question. According to Aulls (1978), evaluative questions require the reader to take a self-selected position regarding (a) the content matter; (b) the way the content is presented; and (c) the knowledge the reader brings to the content matter.

Evaluative questions are useful because

(a) They inject variety into discussions, and they give students experience in making decisions.

(b) They help students learn to react to printed information within an evaluative framework.

(c) Their use implies that reading should be an active rather than a passive experience.

(d) They lead readers to assess how confident they are in the information and to apply the information to real life experiences.

The following are examples of the questions discussed above.

- Cognitive memory questions—When did Christopher Columbus discover America?
- Convergent questions—What are some of the ways the writer believes man is polluting the air in large metropolitan cities?
- Divergent questions—Pretend you would go scuba diving in the ocean near a coral reef. What would it feel like to be under the ocean for a half hour?
- Evaluative questions—How would you feel if you had run into a moray eel while scuba diving?

Using questioning models

Several questioning models have been designed to help students develop thinking strategies as they read different kinds of materials. These models are teacher directed, but they do encourage students to generate their own questions about what they are reading.

1. Directed Reading—Thinking Activity (DRTA)
The purpose of the DRTA is to promote active comprehension on the part of students (Stauffer, 1970). According to Aulls (1978) this questioning model requires students to
   (a) predict what a story will be about and what will happen at each stage of plot development,
   (b) reason about the information as it is read to reject or revise predictions, and
   (c) develop habits of testing predictions through reasoning.

   The basic procedure for this model requires the teacher to act as a facilitator. Before having the students read the story, the teacher provides several readiness questions or activities.
   (a) What do you think a story with a title like this might be about?
   (b) What do you think now or what in the story makes you think that?
   (c) What do you think will happen next?

   This readiness time also provides an opportunity for the teacher to
   (a) allow children to discuss related experiences,
   (b) introduce key words, their meanings and pronunciations,
   (c) develop geographic and time concepts, and
   (d) establish settings and introduction of characters.

   After the readiness period, the children begin to read the story in segments. The teacher should select, in advance, appropriate places to break from reading the story. Then the teacher asks the students one or two of the leading questions about the story and inquires whether the students want to change their initial predictions. This inquiry is made by repeating the question, "What do you think the story will be about?" Discuss as a group what evidence in the story supports the predictions.

   At this point, ask the students if they would like to make any new predictions based on the newly acquired information. Questions such as the following might be asked.

   "Now that we know these things, what do you think will happen next?"

   "How do you think the story could end based on what you know now?"

   After students have read the story, a discussion can follow in which students either confirm their predictions or recognize why their initial choices were in error.

   The major benefit of this type of activity is that it keeps the students actively involved in the reading process. With teachers exercising guidance through the leading questions they ask, students see the importance that questions play in focusing attention on what is being read.

2. Teacher-Student Reciprocal Questioning (ReQuest)
This particular questioning model can be used with both narrative and expository material. According to Manzo (1969) the ReQuest questioning technique serves several purposes:
   (a) Help students formulate their own questions about the text material they are reading.
   (b) Help students develop an active inquiring attitude toward reading.
   (c) Help students acquire purposes for reading.
   (d) Help students begin developing independent comprehension abilities.

   The following procedure can be used to implement the ReQuest technique:

(e) In preparing the selection for ReQuest, the teacher must assure that the difficulty level of the material is suitable for the students. Also, the teacher must decide how much material will be read at one time (one sentence, two sentences, or a paragraph). The ability and maturity levels of the students dictate the amount of material to be read. Finally, the teacher identifies appropriate points in the text where predictions will be elicited.

(f) Communicate to the students the guidelines or rules for ReQuest. It also may be necessary to acquaint students with new vocabulary that will be encountered in the selection and to create interest or develop background for the reading.

(g) Following joint silent reading, students begin exploring behaviors by asking questions of their teacher. The teacher answers the questions and, in turn, refines and extends the developing concepts by asking questions of students. *To re-emphasize, the reciprocal nature of questioning in this technique is what differentiates ReQuest from traditional questioning strategies.*

(h) When a sufficient amount of material has been read, predictions about the outcome of the selection are elicited from the students. Students must also provide justifications for their predictions. Once this is completed, students silently read the rest of the selection for the purpose of verifying their predictions. After the reading, discussion of the reading ensues with the prime focus being the reconsideration of the students' predictions with regard to the outcome of the selection.

3. The TABA Hierarchical Model
The TABA questioning procedure reinforces the importance of sequencing questions (Taba, 1966). Four basic questions are used in sequence to illicit (1) concept diagnosis; (2) interpretation of data; and (3) application of knowledge. The four basic questions (Aulls, 1978) are as follows:

(a) *Open questions* elicit the body of factual information necessary to respond at a higher level.

(b) *Focusing questions* designate specific facts or ideas to be compared or contrasted.

(c) *Interpretative questions* attempt to get students to gather relationships between facts, ideas, or events.

(d) *Capstone questions* evolve a high level of abstraction or a generalizing principle.

Using the SQ3R Method

Surveying, questioning, reading, reciting, and reviewing are the techniques found in a reading-study strategy that has been developed to help students recall information. Commonly known as the SQ3R Method (Robinson, 1961), this method provides students with a process that can be used primarily to read textbook material.

At first, many students find the SQ3R Method time consuming because they prepare to read and review what has been read. But, this approach actually saves time, because students will have a better understanding of the content, thus eliminating the need for a complete re-reading of the material at a later time.

SQ3R can make independent reading assignments more purposeful for students; therefore, it is important that classroom reading assignments of expository material incorporate techniques used in this approach (surveying, reviewing, etc.). As students recognize the benefits of a systematic approach to reading textbooks in classroom situations, they are more likely to follow such an approach in their independent reading. The following outline of the SQ3R Method can be shared with students as a guide in developing this strategy.

OUTLINE OF THE SQ3R METHOD

I. **Surveying** provides a general picture of what will later be studied in detail.
   A. First survey the whole book.
      1. Read preface, foreword, and other materials addressed to the reader.
      2. Study the table of contents.
      3. Leaf through the book.
         a. Read summaries.
         b. Glance at headlines and topic sentences.
   B. Before reading each chapter, survey it.
      1. Read the headings.
      2. Reread the summary.

II. **Questioning** helps learning by giving it a purpose.
   A. Keep asking your own questions.
      1. At first write them down.
      2. Later, do it mentally after it becomes a part of your reading strategy.
   B. Use questions asked by the author.
      1. Use those in the textbook.
      2. Use those in a student's workbook if there is one.

III. **Reading effectively,** you should do the following:
   A. Read actively, not passively, asking yourself periodically what you have learned
   B. Note especially important terms
   C. Read everything, including tables, graphs, and other illustrative materials

IV. **Reciting** is a well-established aid to learning.
   A. It should be done while reading a book in order to remember what is read.
   B. Amount of recitation depends on kind of materials
      1. Up to 90 or 95 percent of study for memorizing is disconnected of materials such as rules, items, laws, or formulas.
      2. As little as 20 or 30 percent of study is for well-organized storylike subjects such as literature or history.

V. **Reviewing** consists of the steps above and the following:
   A. Resurvey the headings and summaries.
   B. Reread primarily to check yourself on how well you can recite.

Using memory aids

Students should become familiar with ways in which they can associate new ideas and information with previously acquired information. Through association, students can increase the likelihood of remembering the increased information base. Two association memory techniques that are useful are mnemonic devices and imagery.

1. Mnemonic devices associate what is to be remembered with a rhyme, an expression, or some other device, they need to be simple and clear to be effective. For example, "When two vowels go walking, the first one does the talking."
2. Imagery involves the creation of a mental picture that is exaggerated or absurd. According to Smith and Elliott (1979), "The student tries to picture a situation related to the material that is so outrageous or unlikely that the intensity of this association will evoke the recall required." (p. 103) As an example, a student visualizes hundreds of pigs going swimming as a key for the recall of the "Bay of Pigs."

SKILL ACTIVITIES IN RECALLING OF INFORMATION

1. Reinforcing the importance of questions during reading (Qritz, 1977) (Primary and Intermediate)
   a. Write the first sentence of a short story, essay, or article on the chalkboard or on a piece of paper. Ask students to write at least ten questions about the sentence. Then have them read the selection and write or be prepared to tell which, if any, of their questions were answered.
   b. Tell a story aloud, stopping in the middle of an exciting part. Record students' responses.
   c. Choose an exciting story which will interest the students. Direct them to read it silently and observe whether they ask any questions. Have them put an "X" whenever (if ever) they notice themselves asking questions. Have them discuss their experiences.
   d. Hand out a comic strip without words. Ask students to figure out the story from the pictures alone, paying particular attention to the things they say to themselves while trying to figure out the story. When they have finished, ask them to report how they derived the story. They may be tempted to tell the story, but focus on how they got it. Students may find that asking questions about the designs or pictures was an integral part of the process, and is something they can do when reading print.
2. Using acronyms for recalling information (Smith & Elliott, 1979) (Intermediate and Senior)
   a. Discuss the usefulness of association techniques for recall purposes.
   b. Invite the students to share some of the association techniques they employ to help them remember particular things.
   c. Define acronym (a pronounceable word made up of the beginning letters or groups of letters in words that make up a title or phrase). Point out that the acronym is used not only for abbreviation purposes but also as an association technique to enhance recall.
   d. List some of the most widely known and used acronyms on the chalkboard. Invite the students to contribute ones with which they are familiar. Begin with any of the following:
      MASH—Mobile Army Surgical Hospital
      CARE—Cooperative American Remittance (to) Everywhere
      SALT—Strategic Arms Limitation Talks
      NATO—North Atlantic Treaty Organization
   e. Spend some time prior to the next examination determining if there may be some helpful acronyms that could be developed. For example, in health class, work with ones like BAT (Basic Aid Training).
   f. Divide the class into rotating committees that would be charged with looking through all new material that the class is expected to recall. Committee members formulate useful acronyms and report them to their classmates.

3. Developing images to improve recall (Smith & Elliott, 1979) (Intermediate and Senior)
   a. Begin the discussion with the students by reminding them of the word with a picture clue card they used as beginning readers.
   b. Ask for examples of how images are also used in adult reading to clarify or strengthen a point or stimulate a response. Help them get started with some of the following:
      1. Graphs in math books
      2. Diagrams in language books
      3. Overlay drawings in science books
      4. Pictures in advertising books and periodicals
      5. Sketches in cartoons and comic strips
   c. Explain to the students that being able to "see" something they are reading often can help them organize their thinking better and consequently increase the likelihood that they can recall it correctly.
   d. Ask the students to share any of their experiences with image creation as it relates to their own reading and learning. Usually, students will volunteer that they "diagram" difficult sentences in their head in order to help themselves understand the word relationships or clarify the meaning of the material. Others will follow with other examples.
   e. Call students' attention to mental images suggested by the material they are currently using.
   f. Ask the class to search through the material they are currently using for parts about which they could form helpful mental images that would assist in their recall of the material.
   g. As opportunities will invariably arise for directing the students to obvious images or image production, continue to encourage their use of the technique throughout the course.

SECTION 4: ADJUSTING READING RATE (READING FLEXIBILITY)

INTRODUCTION

Reading flexibility can be defined as the adjustment of one's reading speed to one's purpose, to one's knowledge and background, and to the nature of the material being read (Harris and Hodges, 1981). For students to gain such flexibility, it is important that teachers provide instruction in the various reading strategies used to gain information from content textbooks, magazines, newspapers, pamphlets, references, etc. It is also advisable to make available to students a variety of different types of reading materials so they can apply the learned reading strategies.

STUDENT COMPETENCIES FOR ADJUSTING READING RATE

Student Competency at the Primary Level (K-3)

- Students exhibit familiarity with various forms of print material.
- Students establish purposes for reading.

Student Competency at the Intermediate Level (4-8)

- Students demonstrate the ability to vary reading rate with purpose (reading flexibility).

Student Competency at the Senior Level (9-12)

- Students use highly developed skimming skills to evaluate the relevancy of books that are of interest to them.

SKILL DEVELOPMENT IN ADJUSTING READING RATE

Selecting a purpose for reading

Reading is done for two broad purposes. Either it is for enjoyment or for information and study.

PURPOSES	
ENJOYMENT	INFORMATION AND STUDY
READ	READ
1. To escape 2. For adventure 3. To dream 4. To delight in language (poetry) 5. To laugh	1. About topics that are important in one's daily life 2. To prepare for a test, to write an assignment, to participate in a class discussion 3. To keep current in one's career

It is important that students understand the choices they have regarding the reason(s) for reading various types of material. Teachers should take time to discuss these choices and give students help in making appropriate selections among the alternatives.

Adjusting rate of reading
A significant goal of any reading program should be to develop readers who adjust reading rate to their purpose. Since many readers fail to establish a purpose for reading, they develop the habit of using the same rate of reading for all situations. Even though a multitude of factors can affect a person's reading rate (see chart below), a continued effort in making students aware of the importance of reading flexibility is needed. This need can be met by using activities that call for the following types of reading rates:

1. Skimming/scanning
2. Rapid reading
3. Study reading

FACTORS WHICH INFLUENCE THE RATE AT WHICH DIFFERENT READING MATERIALS CAN BE ASSIMILATED

1. The reader's knowledge of the general subject matter
2. The vocabulary load difficulty level of words and concepts
3. The reader's degree of motivation
4. The reader's purpose for reading the material
5. The physiological state of the reader, whether fatigued, etc.
6. The length of the reading period
7. Mechanical factors such as size of print and length of time
8. The readability of the material as determined by such factors as style of writing, sentence structure, and sentence length
9. The reader's mastery of the mechanical skills of reading, such as number of words known as sight words, ability to sound unknown words, ability to profit from punctuation, and freedom from the habit of inserting, omitting or repeating words or phrases
10. The number of figures, illustrations, cross references, and footnotes contained in the material.

1. Skimming and scanning
Skimming and scanning are two reading skills used by readers to gain information quickly. *Skimming* is a fast rate of reading employed to find the general idea of the material, whereas *scanning* is a very fast rate of reading used to obtain specific information. One of the most common applications of skimming skills occurs when a reader previews a reading selection or chapter in a textbook. Other types of skimming activities are rereading to review or clarify a main point, skimming a newspaper or magazine to determine essential information, and skimming materials to determine their usefulness for assignments or for recreational purposes. Looking for a phone number, checking the TV guide, using a bus schedule or ordering food from a menu are just some of the common instances when scanning skills are used. The key to the effective use of scanning is the ability to know where the information is located and how to obtain it. If students do not know how to read reference material, it would be difficult to obtain information quickly. Therefore, students should be given opportunities to become very familiar with reference materials. In addition, it is helpful to teach students about the typographical clues that are found in texts such as bold print, italics,

numbers, guide words, headings, etc. These clues are extremely useful in quickly locating information.

As students mature as readers and face more reading requirements, they need to develop one or more strategies that enable them to evaluate quickly the relevancy of a book. One approach, developed by Mortimer J. Adler and Charles Van Doren (1972), in aiding the book selection process is inspectional reading. There are two parts to this strategy. Part one involves systematic skimming or prereading and consists of the following steps:

a. Look at the title page and, if the book has one, at the preface.
This step provides readers with a good idea of the subject of the book and the author's interpretations on the subject.

b. Study the table of contents.
The table of contents provides a basic outline of what is contained in the book.

c. Check the index.
The index contains the range and depth of the subjects covered in the book. It will also list authors and books that have been consulted in writing the book. It is suggested that readers check a few crucial terms listed in the index to determine the author's approach or attitude relating to vital aspects of the subject.

d. Read the publisher's blurb.
This is usually found on the back of the dust jacket, or if a paperback, on the back cover. Here the publisher summarizes in a few statements what the book is about, highlighting why this book is of value to the reader. Of course, readers should take into account that these statements are primarily written to try to sell the book.

After these four steps have been taken, a decision can be reached on whether the book warrants further reading. If that decision can not yet be made, further skimming is necessary.

e. Look now at the chapters that seem to be pivotal to the book's argument. Summary statements which are often located at either the beginning or end of a chapter can be helpful in identifying the important concepts presented in the chapter.

f. Turn the pages, dipping in here and there, reading a paragraph or two, sometimes several pages in sequence, never more than that. It is very important to read the last 2 or 3 pages of the book. It is here that the author will attempt to offer a final summary of the content.

Part two of the inspectional reading procedure is called superficial reading. Adler and Van Doren (1972) claim that the best approach to reading a book is to read straight through, not stopping to look up words or analyze sections. They state two advantages for using this approach.

a. It helps the understanding of the material on a second more closer reading.

b. Even if the book is never reread, a basic sense of what the book was about remains with the reader.

2. Rapid reading
Normal reading rate is established quite early in schooling. It averages between 200 and 300 words per minute, and most material is read at this rate. Obtaining higher rates through rapid reading or through what is known commercially as "speed reading" requires the employment of a highly refined skimming technique which is most useful for a cursory overview of easy or very familiar reading material. However, such skimming techniques can not be applied to the reading of all texts.

Rapid reading exercises are often an enjoyable way to teach skimming skills. Some of the benefits of rapid reading instruction are as follows:

a. Recognition that it is not necessary to read every word to get the "gist" of the material.

b. Improved comprehension because of increased attention and concentration.

The following example illustrates how rate training can be accomplished through the use of inexpensive paperback books.

THIRTY-FIVE DAY RAPID READING PROGRAM (Nemeth, 1970) (Five Weeks)

1. Select a full length novel which is easy and light reading. (Reserve harder materials until technique is mastered.)
2. Determine the approximate number of words per page...(average).
3. Survey the book.
   a. Write the title and author; read anything on front and back covers; table of contents.
   b. Skim first 10 pages jotting down proper names and places.
   c. Repeat the above procedure in the middle and end of book.
   d. Recall anything you may know about author, subject of book, etc.
   e. Use table of contents, preface, anything which may help you get an idea of the general theme of the book.
4. Read for a specified length of time as rapidly as you can giving thought to comprehension. This is a forced rate. The value in this method is that it allows you to go as rapidly as you can. *READ DOWN THE PAGE RAPIDLY.* You may use a zig-zag motion or anything which helps.
5. Calculate your rate—*pages read x words per page equals words read; words read divided by time equals words per minute* —this is your beginning rate; record it. Do your first review by writing down all you remember in short phrases.
6. Double the number of pages you read at the beginning rate.
   a. Place a paper clip on the final page that is read.
   b. Starting from your beginning page, force yourself to read up to the clip in the same amount of time it took to complete the beginning reading; *READ DOWN!*
   c. Keep practicing until you can get to the clip in the same time.
   d. Remember to read *down.*
7. Start from the paper clip and read for the same amount of time for the ending rate. This is new material. GO AS RAPIDLY AS YOU CAN! This is very important! *READ DOWN!*
   a. Calculate your rate as in #5 above.
   b. *Write* a review of what you've read using short words and phrases.
8. Your rate should continue to improve throughout the whole program. If it remains constant for too long, you are not FORCING YOURSELF ENOUGH.
9. Record your rates on the chart.
10. Rate your comprehension good, fair, or poor on the practice sheet.
11. Be sure to read DOWN THE PAGE. Read only key words and main ideas. Be alert when you read.

CHART FOR 35-DAY RAPID READING PROGRAM

WEEK NUMBER _____ GOAL _____ NAME _____ DATE _____

	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
Exact hour or time of practice							
Exact amount of total time used for practice							
Beginning speed (10 min.)							
Twice beginning speed (10 min.)							
Ending speed (10 min.)							
COMPREHENSION (GOOD, FAIR, POOR)	G. F. P.	G. F. P.	G. F. P.	G. F. P.	G. F. P.	G. F. P.	G. F. P.

ADDITIONAL SPEED PRACTICE

Beginning speed (10 min.)							
Twice beginning speed (10 min.)							
Ending speed (10 min.)							
COMPREHENSION (GOOD, FAIR, POOR)	G. F. P.	G. F. P.	G. F. P.	G. F. P.	G. F. P.	G. F. P.	G. F. P.

NAMES OF BOOKS READ:

_____

_____

_____

RATE CHART

2500							
2250							
2000							
1750							
1500							
1250							
1000							
750							
500							
250							

*Developed by Dr. Joseph S. Nemeth, Director, The Reading Center, Bowling Green State University, Bowling Green, Ohio.

3. Study reading
The most deliberate reading, often called study reading, is used for several purposes (Friedman and Rowls, 1980):
   a. To follow directions
   b. To solve a problem
   c. To remember details
   d. To understand the material at the higher levels of comprehension

This slower reading rate is appropriate for students reading textbooks or other study assignments. The SQ3R Method (previously described in Section 3, pages 35-36) is the most common form of study reading used with textbooks.

SKILL ACTIVITIES IN ADJUSTING READING RATE

1. Demonstrating the effects of purpose setting on reading (Smith & Elliott, 1979) (Intermediate and Senior)
   a. Divide the class into five equal groups.
   b. Give each group the same article to read, for example: a short story in an English class, a report on a new development in plastics in a science class, an analysis of a recent governmental election in a social studies class, and so on.
   c. Give each group a different purpose for reading the same article.
      Group 1: Read and tell the story.
      Group 2: Read and be prepared to take a ten-question quiz.
      Group 3: Write the theme and give some supporting details.
      Group 4: Answer these four questions: Who...? What...? When...? Where...?
      Group 5: Tell why you do or do not agree with the article.
   d. Have each group share its ideas within itself and decide what response will be given to the whole class.
   e. Ask each group to explain to the whole class how group members read the story in order to prepare for the purpose given. Discuss how the five different purposes should suggest different kinds of reading behavior.
2. Acquainting students with various purposes for reading in a given content area (Smith & Elliott, 1979) (Intermediate)
   a. Distribute the same article appropriate to the content area to all students. In each subject area it should offer students opportunities for pursuing various purposes such as the following: a description of changing fashions in home economics, a humorous discussion on the political scene in social studies, an argument over the value of cloning in science, a book review in English, and so on.
   b. Ask the students to read the selection and to think of various purposes that they might have for reading the selection. Write each suggestion on the board.
   c. Add these additional purposes to the list, if they have not been given:
      (1) develop an image of an event or a process
      (2) solve problems
      (3) support ideas and requests
      (4) argue against ideas and requests
      (5) clarify a complex or a vague issue
      (6) answer specific questions
      (7) participate in discussions or conversations
   d. Discuss with the students the benefits that come from thinking about purpose before beginning a reading selection. If the teacher did not give a stated purpose for reading, students still would choose a wide variety of purposes for, and therefore approaches to, reading this article just because they would follow their own interests.

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e. For additional practice, have the students take a selection from their text or from a journal on a current study topic, write a purpose for reading, discuss their various purposes, read the selection, and discuss their perceptions of the selection based on their preassigned purpose.

3. Developing skimming skills by using the questions, who, what, when, where, why, and how (Aulls, 1978) (Intermediate)

   Magazines or news articles representing different interests and reading ability levels are among the materials that can be used. Students select a magazine of their choice, read any article of interest, and fill out a sheet similar to the one shown.

Name _____
Date _____
Name of Magazine _____
Date of Publication _____
Title of Article _____
Author _____
Page Numbers _____
Starting Time _____
WHO: _____
WHAT: _____
WHEN: _____
WHERE: _____
WHY: _____
HOW: _____
Finishing Time: _____

4. Improve scanning and skimming skills by practicing gathering information from the encyclopedia and dictionary (Aulls, 1978) (Intermediate)

   a. Materials needed are a set of encyclopedias, a dictionary, and an assortment of "fun facts."

   b. First, a variety of fun facts are developed (see example), then glued on 3″ x 5″ cards.

   c. Then, the student selects a fun fact card.

   d. After a selection is made, the student notes his or her starting time, and then attempts to find the correct answers using the resource material.

EXAMPLE

FACTS

Hawaii has the greatest number of active volcanoes in the world.

Define: lava, crater

QUESTIONS

What causes a volcano?
What is the name of the most active volcano in Hawaii?
Where is Hawaii located?

   e. When completed, the finishing time is noted. The answers can be corrected by turning the card over. Answers are on the back.

SECTION 5: FORMALIZING STUDY METHODS

INTRODUCTION

Students with good study methods are more likely to be better readers, receive higher grades, and find that learning can be enjoyable. Students need to develop habits and attitudes that help them organize and manage the way they learn. Creating a good environment for study, time management, test taking, and research are topics that need to be addressed if independent and productive learners are to be developed.

STUDENT COMPETENCIES FOR FORMALIZING STUDY METHODS

Student competencies at the primary level (K-3)

- Students recognize ways to improve their study environment.
- Students model appropriate behavior for independent study.

Student competencies at the intermediate level (4-8)

- Students employ techniques for improving concentration.
- Students use a form of scheduling to manage their time effectively.
- Students plan for exams by establishing a "continuous review" process.
- Students study for exams using a prediction process.
- Students understand common exam vocabulary.
- Students make appropriate responses to various types of essay questions.
- Students budget time during exams.

Student competencies at the senior level (9-12)

- Students can manage time by completing independent assignments before deadlines and by successfully integrating outside activities with school responsibilities.
- Students research information in an organized manner.
- Students use bibliography cards and research notes in recording research information.

SKILL DEVELOPMENT IN FORMALIZING STUDY METHODS

Creating a good study environment

It is much easier to develop good habits than to break bad ones; thus, independent study habits need to be established early in a student's schooling. At the primary level, part of a teacher's responsibility in promoting study habits is to encourage appropriate study behavior in the classroom. The objective of such encouragement is to have students recognize the benefits of such behavior in completing tasks.

Assessment helps determine what happens when students study and highlights conditions that make it easy or difficult to study efficiently. Such an assessment can be done through a survey or questionnaire that elicits student responses on their study habits. For example, with older students one might use a survey constructed along these lines.

DIRECTIONS: This survey is designed to reflect how you feel about your study strategies. Read each item carefully and then mark the column that best represents how the item affects you.

	Rarely	Sometimes	Frequently	Generally	Almost Always
Reading-Study Strategies					
1. If a special center were available for improving my reading, I would use it					
2. I put off my homework until the last minute					
3. I plan regular times to study					
4. I study less than an hour a day outside class					
5. When I have spare time, I try to find something to read					
6. I have difficulty reading for longer than thirty minutes without becoming bored					
7. I am relaxed when reading					
8. When I start to read a book, I find it hard to finish it					
9. When studying, I try to predict questions that might be on a test					
10. I study with the radio, stereo, or T.V. on					
Organizational Strategies					
11. I examine each of my textbooks for its overall organization					
12. I find it hard to find a single idea in each paragraph					
13. I take notes when I am studying					
14. I have trouble remembering what I read					
15. I underline in my book when I read					
16. I dislike outlining chapters					

With primary age youngsters, responses about their study environment can be gathered by having the teacher read a series of questions or statements about their study habits and attitudes. Students can mark an answer sheet with their responses (see example below).

1. I usually have enough time to complete my work in class.

(Yes) (Sometimes) (No)

2. I have a quiet place at home to read or do my homework.

(Yes) (Sometimes) (No)

3. I know how to study for my tests.

(Yes) (Sometimes) (No)

Besides the use of an assessment instrument, teachers can observe student habits and attitudes during times when they are working independently. During observations, the teacher should look for patterns of behavior that are promoting the student's inattentiveness. After the observations have been made, it is suggested that individual conferences be held with those students experiencing difficulty in maintaining good study habits.

Parents are an important part of the effort to promote good study habits and attitudes. The successful completion of homework may very well depend on parents' encouragement and reinforcement of good study habits and attitudes. To help promote parent involvement, schools need to communicate their policy on homework to parents and teachers need to specify what their expectations are regarding homework (neatness, completion, number of assignments, etc.).

Concentration, an important key to academic success, is simply the best way to think. Yet, it is often a difficult problem for many students. Students need to be made aware of how they can control both external and internal distractions, thus increasing their ability to concentrate. Below are listed several ways students can control external distractions in order to enhance their study environment.

1. Finding a place to study

   Wherever a student decides to study, it should be free from outside distractions. At home a study area, whether a desk or table, should be kept clear of non-school items. Popular magazines, comics, games, etc., if left in a study area, can cause a student's attention to wander from studying. Studying in bed or easy chair is usually not conducive to study because these items actually reinforce the stimulus of relaxation. The student's work area should also contain all the necessary items that are needed to complete assignments. A dictionary, paper, pencils, ruler, etc., should be easily accessible to the student. In school, a quiet place of study should be afforded to students. In most schools this place would be the library, but even in a classroom an effort should be made to limit any outside distraction during study time.

2. Having proper lighting

   Students often study in areas in which the lighting is poor. This can cause eye strain, headaches, and sleepiness, all of which would affect a student's concentration. Students should study with proper lighting in which glare, flickering, and any sharp contrast between light and dark have been eliminated.

3. Attaining quiet

   Whether a student can study with background noise depends on the individual. But many studies have indicated that in a noisier place it takes more energy to study, thus increasing fatigue. For the maximum benefit of concentration, it is suggested that students refrain from having the radio/stereo on while studying. Also, studying in front of the T.V. should be avoided. It will take students twice as long to complete the easiest of assignments, if they watch television as they do homework.

4. Studying in a group

   Often group study is helpful for students especially when they are reviewing for an upcoming exam or if assistance is needed with a subject. But at times, group study shifts students' attention to other topics unrelated to the topic to be studied. In those instances, students will get more accomplished and concentration will be better if they study alone.

5. Combating physical fatigue

   Proper amounts of sleep and a good diet will provide students the necessary energy for study. During class, teachers should observe if any students seem consistently tired. Take a few moments with the student to determine the nature of the problem. A discussion with parents concerning their child's poor performance in school may be warranted if the situation does not improve.

External distractions can easily be remedied, but concentration affected by personal events or problems is much more difficult to control. Students need to learn how to maintain a proper attitude for studying even when other more pressing problems interfere. Several suggestions:

1. Encouraging students to discuss problems

   If through observation it is noted that a student in class is not concentrating and is seemingly preoccupied, take a few moments to discover the problem and try to work out a solution. Through discussion, the problem may or may not be solved. In any event, a way of coping with the problem may be found, thus reducing some of the student's inner conflict.

2. Encouraging students to use self-encouragement phrases or positive thoughts

   Often students simply need to refocus attention on studying. This can be done through self-encouragement and positive thoughts. "OK, I can do it," "I need to look for the main idea," and "I know this studying will help me in the taking of the test," are examples of self-encouragement phrases students can use. These and other phrases can assist students in keeping on task.

   Projecting a picture of a desired result can also help concentration. For example, students could picture themselves doing well in a testing situation or participating in a class discussion. Through such positive thoughts, students can see the benefits of study.

Improving concentration

The following is a list of actions for improving concentration that can be shared and discussed with students:

1. Maintain a positive attitude
2. Develop an interest
3. Prepare to concentrate
4. Vary activities and work in blocks of time
5. Set realistic goals

Managing time

Students need to understand the value of time management and how it can help them become more productive. The following points should be expressed.

1. Time management helps a student achieve goals

   Recognize the need to plan in order to achieve goals. The planning tool that would be most helpful to students is a schedule.

2. Time management increases student motivation

   Establish attainable study goals and the satisfaction gained from goal achievement will increase motivation.

3. Time management allows a student to practice continuous review

   Plan periodic review periods so that information can be kept current. This will eliminate the need to reread old assignments.

4. Time management will help to correct other poor study habits

   Organize available time to help avoid procrastination which leads to "cramming" or incomplete assignments.

5. Time management makes studying more enjoyable

   Accomplishing the goals, meeting the deadlines easily, and feeling more relaxed about studying are all possible when time is managed effectively.

Planning a schedule

This section will explain some of the basic ingredients necessary to make a schedule work and several types of schedules that can be used by students to make better use of their time.

1. Shape schedules to fit each student

   Students need to recognize that schedules are not meant to make major changes in their lives. Rather, they are designed to organize student activities, thus allowing time to be more efficiently spent. Students differ in when they prefer to sleep, to eat, to study, etc. Students like doing things at different times. Schedules that do not fit student life patterns probably will lead to much frustration and little success.

2. Organize time by first seeing how it's spent

   Have students fill out a time analysis sheet (see example on page 51). Students need to determine

   a. How much time is spent in class?
   b. How much time is spent on the necessities of life (eating, sleeping, etc.)?
   c. How much time is spent studying?
   d. How much time is spent in recreational or extracurricular activities?

   As students add up the time spent in each area, they begin to get an indication of how they are spending their time. It is suggested that students do this time analysis for a week or two before they begin making a schedule.

   In developing a schedule, students should consider several factors.

1. Determine how much time is to be allotted for non-academic activities and jobs. Is this time interfering with needed study time? Counsel students by pointing out that doing well academically is their first priority and that while these other activities presently seem more enjoyable or profitable, in the long run academic success will lead to greater rewards.

2. Establish a schedule, allowing sufficient time for essentials such as eating, sleeping, and leisure. Cutting these areas to increase study time is not recommended.

3. Use block time scheduling for study time. Research has shown that people get their best work done by working intensively for a reasonable period of time, then resting or changing to something else. Forty to fifty minutes is a good unit of time for high school students. Younger students may not be able to sustain concentration for that length of time, so shorter periods of time are more appropriate for them.

4. The division of study time into units is called block time scheduling. In block time scheduling

   a. limit each block of study time to the appropriate unit of time (30, 40 or 50 minutes)
   b. change to a different subject in the next block of study time

5. Build periodic review periods into the schedule. When it comes time for taking an exam, many students find themselves relearning old material because they have forgotten most of it. Help students avoid this time consuming practice of relearning material by having them schedule time each week to review material from previous assignments. This practice will ensure that material learned is kept current.

Types of schedules

In this section, different types of schedules will be shown. Again, the type of schedule most suitable for students is one that is most helpful in keeping their time organized and is most comfortable to follow.

Schedules can be very complex or very simple. When introducing these planning instruments, make sure that the type of schedule being explained is not more sophisticated than the actual needs of the students. One suggestion is to begin students with daily schedules such as checklists, then move to weekly schedules. For older students who are faced with completing more long term assignments, a monthly schedule would certainly be beneficial.

EXAMPLE OF A TIME ANALYSIS SHEET

Activity	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Class	5	5	5	5	5	—	—
Study Hall	1	1	1	1	1	—	—
Homework	2	2	2	1	—	—	1
Band	—	1	—	1	—	—	—
Yearbook	1	—	1	—	—	—	—
Job	1	1	—	—	2	4	—
Chores	1	1	1	1	1	2	1
Eating	2	2	2	2	2	2	2
Sleep	8	8	8	8	8	8	8

EXAMPLE OF A DAILY SCHEDULE

Tuesday	Things to Do	Done
9:00—History	1. Read Chapter 5 2. Answer questions on study guide	X
10:00—Reading	1. Bring newspaper to class	
11:00—Gym	1. Have mom or dad sign permission slip	
1:00—Science	1. Finish lab experiment	X
2:00—Math	Problems 5, 6, 8, 10, 12	
3:15—Band	Bring sheet music to practice	X
4:30	Meet Joe and Tom	
7:00	Study for math quiz	
8:00	Finish answering history questions	

EXAMPLE OF A WEEKLY SCHEDULE

Time	Mon	Tues	Wed	Thur	Fri	Sat	Sun
7-8	Breakfast/catch bus →						
8-9	English →					Job	
9-10	History →						
10-11	Gym	Study Hall	Gym	Study Hall	Study Hall		
11-12	Lunch →						
12-1	Reading →						
1-2	Science →						
2-3	Math →						
3-4	Band	Language Club	Band				
4-5							
5-6	Supper →						
6-7	Chores →						
7-8	Study ↓		Rec.	Study ↓	Movies ↓		Review Assignments
8-9	↓		Study	↓	↓		
9-10							

EXAMPLE OF A MONTHLY SCHEDULE

Assignment Sheet for Senior English **Month of October**

Mon	Tues	Wed	Thurs	Fri
(1	(2 Read *Invisible Man* ——pp. 3-100——	(3	(4 Quiz	(5 In-class Writing Assignment
(8	(9 Read *Invisible Man* ——pp. 100-200——	(10	(11 Term Paper Topic Due	(12 Small Group Discussion
(15 Finish Reading *Invisible Man*	(16	(17 Review	(18 Test *Invisible Man*	(19 Read *The Stranger*
(22 *Term Paper* Working Bibliography Due	(23	(24	(25	(26
(29	(30 *Term Paper* Outline Due	(31		

LONG-TERM ASSIGNMENTS: Term Paper—First draft due November 6
Essay due—November 9
Term Paper due—November 11

Taking exams

Since examinations play such an important role in assessing students' academic performance, it is critical that instruction be given to students in preparing for and taking tests. The objectives of this type of instruction are to reduce test anxiety and cast the testing situation into a more positive light.

1. Planning for exams

   Students need to be taught the value of implementing a continuous review process. Continuous review helps students overcome the habit of leaving everything to the last minute and then resorting to "cramming" as a means of studying for exams.

   There are three phases to the continuous review process.

   a. Initial review

      This review takes place after a student has read a chapter or has taken class notes. Encourage students to take a few minutes and review their reading or notes. This immediate reinforcement of the material just learned will help students retain new information.

   b. Weekly review

      During the week students should schedule a review time in which they will spend about 30 minutes reviewing the readings and notes for the week. This very quick review will help keep the material fresh in the students' minds.

   c. Final review

      Approximately 4 or 5 days before the exam, students should establish and maintain a final review schedule. Several review sessions prior to the test are more beneficial to the student than one lengthy session the night before the test. Teachers can encourage this type of planning by giving students adequate notice of an upcoming exam. When students fail to practice a form of continuous review, they find themselves rereading and relearning much of the material the night before the test.

2. Studying for exams

   The best way for students to study for an exam is to try to predict exam questions and organize answers to these questions. This prediction process forces students to try to determine what are the most important points that are covered in an exam. By predicting and answering questions prior to a test, students evaluate themselves on how much they know and how well they can state this knowledge. This process forces the student to synthesize the material and see it as a unit instead of as isolated bits of information. In writing answers to predicted questions in a simulated test situation, students study for the exam in the best possible way. It is a more practical study method than continually reviewing one's notes or rereading the text.

   Students must realize that they will not be able to predict the exact questions that will be on the test. They should be close enough, however, to have only to make minor adjustments in answering the actual test questions. Practice test questions can come from

   a. A student's reading or class notes

   b. Textbook headings

   c. Textbook questions listed at the end of each chapter or unit

   d. Teachers

   Even if the exam is totally objective, it is best to study for it as if it were an essay exam. It has been found that students who have studied for an expected essay exam did just as well or better when given an objective exam.

3. Procedures for taking exams

   There are a few general rules students should observe when taking either an objective or essay test. Teachers should take time to review these rules with students prior to an examination.

   a. Find out from the teacher the type of test and the material that will be covered.

   b. Learn the scoring rules and find out if there are any penalties for guessing.

c. Read the directions on the test and follow directions exactly as the teacher gives them.

d. Read through the examination in order to get the thought processes started. This will only take a few minutes, and it is time well invested. Also in previewing, students should judge how long it will take to answer each question and how much each question is worth.

e. Answer the easiest questions first, then return to work on the more difficult ones.

f. Avoid reading into questions and guard against reading out of the question. Look for qualifying phrases.

g. Do not waste time trying to answer a question, the response to which momentarily escapes recall. Skip the question and return to it later. Pick up additional information from other parts of the test that will aid in answering the question.

h. Check the test before turning it in. Attempt to answer every question. Do not be afraid to change an answer if it should be changed. Surveys have shown that students tend to change twice as many answers from wrong to right as they do from right to wrong.

4. Preparing for essay exams

Essay exams can become less of a problem for students, if they become familiar with the techniques of answering essay questions. These include the following:

a. Read the entire set of questions before starting to write.

b. Start with the question on which you feel most qualified to write.

c. Plan an outline before writing an answer.

d. Answer the question as specifically and completely as is possible. Don't be "wordy" and don't generalize.

e. Give examples when possible.

f. Leave space for additions to answers. While answering one question, ideas pertinent to other questions often come to mind.

g. Watch time limits and allow time to review answers.

h. Write neatly and proof for spelling, usage, and punctuation.

5. Types of examination questions

In taking essay exams, it is extremely helpful if students recognize the different terms used in essay questions. Students should become familiar with these terms with the requirements they impose on students in answering questions. The following chart lists directive test vocabulary found in most examination questions.

TEST VOCABULARY

When the examination states:	Students are asked to:
1. compare	show two or more items showing similarities and differences.
2. contrast	show two or more items showing differences or dissimilarities.
3. criticize	explain their point of view and the arguments that support or reject it.
4. define	make a clear statement including all items which belong within the category they are defining but excluding all items which do not belong.
5. diagram	show a picture, chart, or plan.
6. discuss	outline the item completely paying special attention to organization. Present pros and cons and illustrative details.
7. enumerate	show a numbered list of items or ideas—1, 2, 3, 4, 5.

8.	evaluate	provide a reasoned judgment; authoritative reasons.
9.	explain	show a how and why.
10.	illustrate	provide an example or examples.
11.	interpret	show an explanation of why.
12.	justify	provide a proof of why this is.
13.	list	name or enumerate the items briefly one after the other.
14.	outline form	list main points and essential details.
15.	summarize	present concisely the main points of the topic, omitting details and illustrations.
16.	trace	develop a sequence—start with a date and go forward or backward, or give in the order of happening.

All essay questions resemble one of the following three formats.

a. Trace questions

Describe a sequence of events or steps. In answering this type of question, students should:

1) Define the terms

Define the item(s) before proceeding to the next step. For example, if a student is asked to describe how to build a planter, first of all a definition of a planter is needed.

2) Be sure the answer is within the boundaries of the question

The essay question, "Trace the development of federal support of education in the 1960's" requires that the student deal strictly with a specified time period. The answer should not include what happened earlier than 1960 or what occurred after 1969. This might be interesting information, but it wasn't asked for.

3) Keep the steps/events in order

These questions ask for a response that is chronological or sequential in nature. To ensure full understanding, the sequence of ideas must be kept in order.

b. Compare and contrast

Require students to note the similarities and differences between two or more items, ideas, etc. Often this can best be done by using a chart with parallel columns. If students use a paragraph format, they should ensure that their comparisons are systematic and do not jump around. In answering a compare and contrast question:

1) Describe the terms/places/events/issues

2) Tell how they are similar

3) Tell how they are different.

Many students make the common error of just describing how the items, ideas, etc., are similar or how they are different. In answering this type of question, students must do both.

c. Discussion questions

Students are required to present many points of view, especially their own ideas, by providing illustrations and examples to support main points.

Students should follow these guidelines in answering a discussion type question:

1) Describe or define all terms/events/people/etc.

2) Describe the relationship between the parts of the question.

6. Budgeting time during an exam

   A common complaint among students is that they did not have enough time to finish the exam. Lack of time is most likely caused by not budgeting it correctly. In order to allow enough time for each question on an exam, it is necessary that students schedule times for each question and stick to the schedule.

Students should follow these steps when budgeting time during a test.

1. Take about five minutes (no longer), to preview the test.
2. Determine the time needed to answer each question by
   a. dividing the time available according to the value of the question
   b. writing down the actual time for starting each question
3. Start each question at its scheduled time. This allows the opportunity to answer all questions.
4. Allow 5 to 10 minutes to review answers and return to questions that may not have been completely answered.

EXAMPLE OF SCHEDULING EXAM TIME
TOTAL TEST TIME—50 MINUTES

STEP 1. Preview exam (5 minutes).

I. Briefly discuss the following terms (25 points).
   A. (question)
   B. (question)

II. Answer all questions (75 points).
   A. (question)
   B. (question)
   C. (question)

STEP 2. Determine amount of time for each part of the exam.

I. Briefly discuss the following terms (25 points).
   A. (question) 10
   B. (question) minutes

II. Answer all questions (75 points).
   A. (question) 30
   B. (question) minutes
   C. (question)

STEP 3. Determine the amount of time for each question.

I. Briefly discuss the following terms (25 points).
   A. (question) 5 minutes
   B. (question) 5 minutes

II. Answer all questions (75 points).
   A. (question) 10 minutes
   B. (question) 10 minutes
   C. (question) 10 minutes

STEP 4. Write down starting times for answering each question.

I. Briefly discuss the following terms (25 points).
   A. (question) 2:05
   B. (question) 2:10

II. Answer all questions (75 points).
   A. (question) 2:15
   B. (question) 2:25
   C. (question) 2:35

III. Review 2:45

Formalizing research skills

Students, especially those planning to attend college, should be given instruction in how to conduct research. Locating and using information resources is an important aspect of this instruction (see Section 1), but students also need to develop skills in planning research papers and recording research information.

1. Library search strategy.

   A step process that provides an organized approach in assuring all relevant information on a subject is retrieved has been developed by Kartis and Watters (1983). This approach or a similar one should be presented to students so that they become aware that research must be planned in order to have a successful product (research paper, etc.).

DEVELOPING A LIBRARY SEARCH STRATEGY (Kartis and Watters, 1983)

STEP 1: Become familiar with the library

- a. Become familiar with the physical layout of the library.
- b. Become acquainted with the reference librarians and with interlibrary loan procedures.
- c. Determine if the library's holdings can accommodate the research to be conducted.

STEP 2: Select a topic

- a. Selection of a topic is a critical step in conducting a literature search.
- b. Several factors should be considered when selecting a topic.
  1) It should be challenging and interesting.
  2) It should be within the student's capabilities.
  3) It should be appropriate for the assignment or research required.
  4) There should be sufficient original data available to conduct a meaningful investigation and synthesis.
- c. Literature summaries in encyclopedias or handbooks are excellent beginning points for selecting a topic.

STEP 3: Delimit the selected topic

- a. By answering the following questions, the topic of investigation can be limited so that it is manageable.
  1) What is the purpose of the research?
  2) Who is the audience?
  3) What is the perspective (e.g., current issue, historical overview, empirical research)?
  4) What is the expected end product?
  5) How much time can be allocated to this project?

STEP 4: Begin the literature search

- a. Try to locate subject bibliographies on the topic.
- b. Check the currency of the bibliography.

STEP 5: Take complete bibliographic notes

- a. Record information about each pertinent source on index cards.
  1) Author
  2) Title
  3) Publisher

4) Date of publication
5) Call number and other information that helps locate the source
6) Content notes

STEP 6: Evaluate books, monographs, and other sources

a. Evaluate sources as to their significance to the research being conducted.

STEP 7: Identify periodical literature

a. Periodicals are the best source for current information.
b. Consult periodical indexes.
c. Record the necessary bibliographic information.

STEP 8: Evaluate periodical literature

a. Evaluate sources as to their significance to the research being conducted.

STEP 9: Identify other sources of information

a. Check newspapers, statistical tables, government documents, and other types of printed material (usually located in the vertical file).

STEP 10: Construct a bibliography

a. The bibliography identifies those sources to be used in preparing a written report of the research.

2. Recording research information

A. Bibliography cards

Bibliography cards provide a ready reference of the resources used to gain information for a research paper. The bibliography card identifies the reference as a whole in such detail that another person who might wish to use it could find the resource through the indexing services of a library. The three basic parts of a bibliographical reference are the author entry, the title, and publication data. The title page of a book will provide most of the information needed for the bibliography card.

The following suggestions should be shared with students regarding the use of bibliography cards.

1. Find references on a topic, record each one immediately on a separate 3″ x 5″ index card.
2. Keep the bibliography cards in alphabetical order by the last name of the author or the last name of the first author if there is more than one. For some articles, the name of the author may be omitted. The reference should then be indexed under the first word of the title excluding *a*, *an*, and *the*.
3. Give a complete and accurate reference to a source.
4. Record on the card for future reference the library call number of the book but do not include this in the final bibliography. Other notations that will help students recall the location of a reference in the library can also be recorded on the card.

The following are sample bibliography cards for some basic types of reference:

a) Book by one author

Give author's name, last name first; title of the book, underlined; place of publication, the first listed if there are two or more; name of the publishing company; date of publication.

Hailey, William Malcolm
An African Survey: A Study of Problems Arising in Africa South of the Sahara.
London: Oxford University Press, 1957.
309.16 Very detailed (1676 pp.)
On reserve.

b) Article in a periodical

Give name of author, if possible; title of the article in quotation marks; title of the periodical, underlined; volume number and the pages for the entire article; month and year of publication.

Reed, David
"Ivory Coast—Africa's Big Success Story"
Reader's Digest, 86: 107-12. Jan., 1965
Stresses economic development.

c) Article in an encyclopedia

Give the author of a signed article, title of the article in quotation marks, title of the encyclopedia, volume number and pages for the entire article, date of the edition.

Bloch, Judith
"Republic of the Ivory Coast"
Collier's Encyclopedia
Vol. XIII, pp. 411-15. 1964 ed.
A good general article.

d) Book with chapters by different authors

Give the author of the chapter or section that you used; number of the chapter or section and the title in quotation marks; title of the book, underlined; name of the editor; place of publication, publisher, and date; pages for the chapter or section.

Thompson, Virginia
Chapter IV, "The Ivory Coast," in *African One-Party States*. Edited by Gwendolyn M. Carter.
Ithaca, N.Y.: Cornell University Press, 1962. Pages 237-324.
960 Af 83 Virginia and her husband, Richard Adloff, have written two books on French West Africa published by the Stanford University Press.

B. Taking research notes

The most practical way for a student to write a research paper is to use notes from the sources used in the research. If these notes are prepared properly, students will find it easy to organize the material for writing. Here are some points students should keep in mind when taking research notes.

1. Write notes on cards (either 4″ x 6″ or 5″ x 8″).
2. Have only ONE SUBJECT and ONE REFERENCE SOURCE on each card.
3. Include on each card (see sample note cards):
   a. The name of the one specific subject treated on that card.
   b. The source (author's name, shortened title, and anything else needed for positive identification).
   c. Notes on the material intended for use.
   d. In the left margin, the pages where the material is found.
4. Take notes in your own words as briefly as possible. Use incomplete sentences and abbreviations, so long as they can be understood later. Make certain that the notes are fair summaries of the statements read.
5. Copy accurately and completely, and enclose quoted material in quotation marks.
6. Record only facts which are new or stated in an unusual way. Don't take down obvious, easily remembered, well-known, or general statements.
7. Continue the notes on additional cards for the same subject and reference. Repeat the heading and source on each card and number the cards in sequence.
8. Check to see that the cards resemble the following sample. Note especially how the source has been shortened to include only enough information to make certain that the complete bibliography card can be identified later.

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9. Sample note cards

a. Quotation

Clepper, "A Visit to FAO"
Potential of tropical forestry
p. 15
"According to Dr. Osara, an increasing volume of the world's supply of wood and fibre will come from the tropics. Coniferous pulpwood, for example, from tropical and semi-tropical zones will be produced at a fraction of the cost in Europe and North America... It is in the warmest zones where quick growing coniferous species are capable of a high output of softwood timber and fibers within a comparatively short time."

b. Summarization of factual information

Hailey
Beginnings of Forestry in the Ivory Coast
p. 192
Commercial value of forests was recognized by the French colonial government. By 1884 *concessionnaires* began to exploit forests. They proceeded so rapidly that a labor crisis resulted (bad living conditions, high mortality of workers). Became difficult to recruit laborers. Situation brought under control by 1912. Forest Services created in 1925.

c. Analysis and summarization

Kimble, Vol. I
Problems of harvesting tropical timber
pp. 204-5
1. Seldom find a pure stand of a species.
2. Cutting unwanted trees does not help develop pure stands since tropical hardwoods do not "live with their own bird" (except conifers).
3. Identification of merchantable trees difficult on the ground level—crowns difficult to see, trunks similar.
4. Distribution of species is uneven.
5. Indigenous trees grow slowly despite rapid growth of other vegetation.

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SECTION 6: USING GRAPHIC AIDS

INTRODUCTION

Graphic aids such as maps, charts, graphs, etc., play a critical role in helping readers understand expository information by providing concreteness to abstract concepts. Instruction in the use of graphic aids will also help develop higher order comprehension skills. According to Bruner and Campbell (1978), "The development of lessons utilizing graphic aids can teach students critical reading skills of analyzing and interpreting data, and making inferences and drawing conclusions based on this data."

STUDENT COMPETENCIES IN USING GRAPHIC AIDS

Student competencies at the primary level (K-3)

- Students use pictures as an aid in understanding text.
- Students can read picture graphs and circle or pie graphs.

Student competencies at the intermediate level (4-8)

- Students can read and interpret tables, charts, bar and line graphs, maps, diagrams and timelines.

Student competencies at the senior level (9-12)

- Students prepare graphic aids as a means of presenting information.

SKILL DEVELOPMENT IN USING GRAPHIC AIDS

Using pictures

Pictures, the most widely used of all graphic aids, are often perceived by students as space fillers, and they may pay little attention to them, even though they are excellent sources of information. Pictures can do the following: 1) provide interest and stimulate thinking; 2) portray something for which the student may have no referent in his or her own realm of experience; and 3) aid in clarifying and organizing written material. In addition, pictures are effective in showing step-by-step developments, contrasts and comparisons, and the status of things, processes, scenes, and events (Shepard, 1978).

Students can benefit from a systematic presentation on how to use pictures to gain information (Brunner and Campbell, 1978).

1. Ask students to study the title of the picture and any caption.
2. Direct students to look at the total picture to gain a general impression.
3. Have students point out specific details within the picture. If relevant, ask students to note background details, largest and smallest objects, or a person in the picture. This is helpful in developing the skill of noting details.
4. Ask questions that require students to make inferences and predictions, and to draw conclusions based on the details presented in the picture.

Using cartoons

A cartoon is a special type of picture which is symbolic and which, with the use of exaggeration, expresses a point of view. Students will have difficulty with cartoons if they do not recognize the symbolism or if they are limited in the experiential background on the subject(s) being portrayed in the cartoon.

The following steps are helpful in understanding cartoons (Shepard, 1978):

1. Recognize the technique used in the cartoon —humor, an appeal to emotion, satire, symbolism, caricature.
2. Identify and analyze the symbolism to get the message the cartoonist is attempting to show.
3. Make a generalization based on the interpretation of the cartoon.
4. Evaluate the cartoon for bias, emotional tone, and prejudices.

Using maps

Maps abundantly found in most social studies textbooks are also used in science, mathematics and literature textbooks. Dale (1946) identified five types of maps:

1. Physical—Show geographical outlines and communicate physical features such as temperature and rainfall. Often they vary in the amount and quality of information they provide.
2. Commercial or Economic—Communicate product, import/export, and general industrial information regarding specific geographic regions.
3. Political—Specify state, county, and ideological boundaries in specific geographical regions.
4. Special maps—Indicate such things as territorial changes, occupations, military campaigns, cultural characteristics, etc.
5. Combination maps—Utilize together two or more of the features presented above.

Map instruction can be systematically taught by teaching the following skills (Roe, Stoodt, Burns, 1978):

1. Locating and comprehending the map title

   Examine the title of the map to determine what area is being represented and what type of information is being given about the area.
2. Determining directions

   Locate the directional indicator on the map for orientation to the map's layout.
3. Interpreting a map's legend

   Understand the legend which contains an explanation of each of the symbols used on a map.
4. Applying a map's scale

   Use the map scale in order to determine distances on a map.
5. Understanding latitude and longitude

   Locate places by using coordinates of degrees of latitude and longitude.
6. Understanding common map terms

   Understand many common map terms (e.g., equator, hemisphere, isthmus, bay, and many others) prior to working with maps.
7. Making inferences concerning the material presented on a map

   Present activities that go beyond developing basic location skills and require inferences to be made about the material represented on maps.
8. Understanding projections

   Illustrate map distortion, by comparing the different types of projections used in flat maps and globes.

Using graphs

Graphs are useful in showing quantities, growth or decline, or size of relative parts. There are four basic types of graphs: picture graphs, circle and pie graphs, bar graphs, and line graphs. When working with graphs, students should employ the following procedures:

1. Search for the main idea or purpose of the graph
2. Gain familiarity with the specialized symbols used in the graph or chart
3. Locate specific information contained in the graph

The sequence for teaching the types of graphs should be as follows:

1. Picture graphs (pictographs) compare quantities using pictures and are the easiest to read because the symbols have a specific stated value.

2. Circle or pie graphs show relationships of individual parts to the whole. Both picture and circle graphs can be introduced in the early elementary grades.
3. Bar graphs use vertical or horizontal bars to compare quantities.
4. Line graphs show changes in amounts usually over a period of time. These graphs tend to be more difficult for a reader to understand.

Also, students need to keep the following considerations in mind as they interpret graphs:

1. Type of graph
2. Kind of data presented
3. Unit of measurement
4. Arrangement of data
5. Numerical guides of the horizontal and vertical axes
6. Significance of the information

Using tables

Tables contain information arranged in vertical columns and horizontal rows. To read tables students need to answer

1. What is the title—what does the table represent?
2. What units of measurement are used?
3. What do the columns and rows represent?
4. What special explanations (footnotes) are used?
5. What is the significance of the data of the table?

The major problem students have in reading tables is extracting the specific information from a large amount of available information. To help alleviate this problem teachers should provide practice in locating the intersection of an appropriate column with an appropriate row.

Using charts and diagrams

Charts and diagrams are designed to help students picture the events, processes, structures, relationships or sequences described by the text. In many cases, authors use these graphic aids to summarize material. One caution in interpreting charts and diagrams is that they may distort or over-simplify information.

Using timelines

Timelines are graphic outlines of data usually a chronology of facts, events, etc. They are a very useful way of organizing or summarizing information.

SAMPLE ACTIVITIES FOR USING GRAPHIC AIDS

1. Processing symbols within a text or selection (Smith & Elliott, 1979) (Intermediate and Senior)
   a. Generate a list of commonly recognized symbols. Start them out with a few examples, perhaps including
      1. Golden arches
      2. K-Mart sign
      3. Symbol for pure wood
      4. Shell for Shell Oil
      5. 7-11
      6. Chevrolet
      7. GE
      8. Bell for Bell Telephone
      9. VW
      10. RCA
      11. Warner Brothers
      12. Universal Studios
   b. Complete list and ask each student to select five or six. Then ask each student to write a short selection including those items, in each case using the symbol in place of the word. Spend some time reading the students' stories aloud. Distribute duplicated copies, or use an opaque projector.

c. Generate original symbols. These should avoid print or alphabet letters, relying instead on created designs. Each student should then write a brief story, consistently using the created symbols.

d. Duplicate stories so that students have access to what their classmates have written. They should then attempt to assess the meanings of the various symbols from the context. At this point, each author should make available a decoding sheet so that students can determine their level of success.

e. Discuss the fact that almost all disciplines, especially math and science, use nonverbal symbols (literature uses verbal symbols) as an integral form of communication. They should each then write a brief selection, using the symbols of the course subject, and exchange them as they did above. If this exercise could be repeated regularly, students would become so familiar with the symbols, they would develop automatic responses to them—as is needed for easy reading of all symbols.

2. Constructing a graph(s) using school related information (Roe, Stoudt & Burns, 1978) (Intermediate and Senior)

Some examples of graphs:

a. A picture graph showing the number of tickets to the senior prom purchased by each homeroom.

b. A circle graph showing the percentage of each day that the student spends in various activities (sleeping, eating, studying, etc.).

c. A bar graph showing the number of outside readings completed for English class during each grading period.

d. A line graph showing weekly quiz scores of one student during one six week period.

3. Introducing the usefulness of graphic aids (Lapp & Hood, 1979) (Primary)

a. Develop a chart illustrating the height and weight of each student.

b. Design a map which depicts the home location of each student.

c. Construct diagrams showing how to use classroom AV equipment.

d. Develop pictures describing each child's interests.

SECTION 7: FOLLOWING DIRECTIONS

INTRODUCTION

Following directions is not an easy task, and student performance often is hampered by an inability to follow directions. As with any study skill, students should be given many opportunities to work on following directions throughout their schooling. At the primary level, teachers should develop activities which help students follow both one and two step oral and written directions. In the intermediate grades, with students' increased ability to reason and see relationships, three-step and multistep directions can be introduced in both oral and written forms. At the senior level, students should continue working with activities which allow them to interpret, analyze and evaluate directions.

STUDENT COMPETENCIES FOR FOLLOWING DIRECTIONS

Student competencies at the primary level (K-3)

- Students follow one- and two-step oral directions.
- Students follow one- and two-step written directions.

Student competencies at the intermediate level (4-8)

- Students follow three-step oral directions.
- Students follow three-step written directions.
- Students follow multistep oral directions.
- Students follow multistep written directions.

Student competencies at the senior level (9-12)

- Students follow multistep written directions.
- Students interpret, analyze and evaluate directions for applicability.

SKILL DEVELOPMENT IN FOLLOWING DIRECTIONS

Suggestions for improving directions

Teachers can help students understand and follow directions by

1. Making sure directions are clear and within the student's realm of understanding.
2. Presenting directions in written form if they are lengthy or complex.
3. Establishing the practice of giving directions only once and expecting them to be followed. This fosters greater student attention.
4. Ensuring that it is feasible for students to carry out the directions.

Suggestions for giving oral directions

Throughout a school day numerous oral directions are given. To aid students in listening to these directions, teachers should

1. State directions so that each step in a series is presented in the exact order in which it is to be performed.
2. Use words within a student's listening vocabulary.
3. Use sequencing words—first, second, after that, then, finally—which add clarity to directions.
4. Ask listeners to repeat the steps in the directions while a notetaker (the teacher in the early primary grades, a youngster by grade three) records key steps on the blackboard.
5. Encourage students to jot down step-by-step notes when complex directions are given.
6. Encourage students to ask questions when points are unclear.

Suggestions for giving written directions

When writing directions for students, teachers should consider how the factors identified below can improve the readability of directions.

1. Sentence structure

   Directions should be written using common language patterns such as simple declarative or imperative sentences. If a compound sentence is used, it is best to use one in which two clauses are joined by a conjunction. This type of sentence is most easily comprehended by students. Also, directions become more difficult when pronouns are used because students are forced to locate referents. To avoid this problem, repeat the noun used in the directions.

2. Vocabulary

   Appropriate vocabulary is critical in written directions. Pikulski and Jones (1977) identified two types of vocabularies found in directions.

   One is *direction-related* vocabulary which guides the actions of the reader. Terms like determine, hypothesize, and observe can be classified as direction vocabulary. When this type of vocabulary is used, teachers often commit two common errors:

   a. Using direction-related words that are familiar to the teacher, but not to the children.

   b. Using direction-related words that are not specific enough.

      Example:

      (Not specific) Hold the yellow paper up to the window.

      (Specific) Put the yellow paper against the window.

   The second type of vocabulary used in written directions is *concept-related vocabulary*. These words give directions meaning, but too many unfamiliar ones may make directions incomprehensible. To ensure understanding teachers should discuss concept vocabulary with students prior to giving directions.

3. Illustrations

   Illustrations can aid the reader in understanding directions, and they should be used wherever it is appropriate. For example, if a sequence is to be followed, illustrations showing each step can be provided along with the written directions. When written directions are used to aid in constructing a finished product, an illustration can serve as an advance organizer and as a means of self evaluation upon completion of the task.

Finally, two other considerations should be made when producing written directions:

4. Sequence

   Determine that directions are in the correct sequence, and if possible, write them in list or numbered fashion.

5. Readability

   To enhance understanding further, directions should be typewritten with a generous use of blank space. The use of color or underlining also helps students focus on the critical sections of written directions.

SKILL ACTIVITIES FOR FOLLOWING DIRECTIONS

Numerous kinds of activities can be used within the instructional program, at all grade levels, to help students follow directions. As the following examples suggest, these activities take little instructional time but can be extremely beneficial and often quite enjoyable.

1. Following simple oral directions (Lapp & Flood, 1978) (Primary)

   "Simon Says" or any variation of this game can be a very useful activity to help students follow one and two step oral directions. The students form a circle or several lines with the leader standing in the center or in front of the lines giving directions. Whenever directions are introduced with "Simon says," players follow them. If directions are given without "Simon says," players ignore them. Players who follow directions that have not been prefaced with "Simon says" are out of the game. The last player standing can be the leader of the next game.

2. Understanding relational concepts, as well as following directions (Lapp & Flood, 1978) (Primary)

   A leader is selected who calls out "up," "down," or "middle." Players point up when that word is called, point down when "down" is announced, and hold arms waist high at "middle." Players must listen closely to make an immediate and accurate response. Any of the relational words used as prepositions or adverbs can be substituted in this game: over, under, in, out, by, with, here, there, near, far, around, or at. Appropriate gestures are paired with each word.

3. Providing practice in writing by using a listening activity that stresses following directions (Lapp & Flood, 1978) (Primary)

   Each child is given a blank sheet of paper and a set of colored crayons. (If children do not yet know all the colors, use only black.) To start, the teacher gives three or four simple directions such as "Draw a red number **1** near the top of your paper. Write a capital **E** with your green crayon. Place the green crayon on the right hand side of your paper. Write an orange lowercase **s** in the middle of your paper. Connect the **s** to the **E** by drawing a black line from the **s** to the **E**."

4. Developing an understanding of sensible directions (Lapp & Flood, 1978) (Primary)

   The teacher introduces the game by saying, "Today we are going to play 'Bring Me.' Sometimes I will say your name and then give some sensible directions such as, 'Bring me the chalk.' If the directions are sensible and possible to follow, you must leave your desk and bring me what I ask for. If, however, I ask something impossible such as 'Bring the wall,' you must not move. Just remain seated."

   Players divide into teams for this game. When a player makes a correct response, the team gains a point. If, however, a player moves to follow a set of impossible directions or brings the wrong object, the team loses its turn to score.

5. Helping students follow and give three step directions (Smith & Elliott, 1979) (Intermediate)

   A game such as "Ring the Bell" can be used to help students focus on listening to a sequence of directions. The students place a bell at the center of the activity area. The teacher gives a series of directions and calls on a player to carry it out, for example:

   a. Hop to the bell on one foot, ring it, and return to your place hopping on the other foot.

   b. Walk to the bell, walk around it twice, and then ring it three times.

   c. Skip to the bell, ring it twice, smile at Emily, and hop to your place.

6. Encouraging students to record oral directions and assignments (Smith & Elliott, 1979) (Intermediate)

   The teacher might start a day by saying, "Today we are going to do many different kinds of things on our own. Instead of recording tasks on the board, I am going to give them orally. You record the main jobs to be done on this sheet I am handing out. Record these tasks on your study guide using just a few words for each. I will give directions slowly, but you will have to listen closely to get everything down exactly right.

OUR STUDY GUIDE
Name _____ Date _____ First do this: _____ Second do this: _____ After that do this: _____ Then do this: _____ When you have done these four jobs, you may do any or all of the following things: 1. _____ 2. _____ 3. _____

7. Following directions contained within a communication (Smith & Elliott, 1979) (Intermediate)

   Students write a series of directions for acts that can be performed in sequence in the classroom. One author then reads aloud five steps that another is to perform after hearing all five. After all have listened to the sequence of steps, the reader chooses one member of the group to perform the acts in correct order. Students will think of directions like these: (a) open and shut a window; (b) take a notice off the bulletin board; (c) open and close a book; (d) write and erase your name on the chalkboard; (e) return to your seat at the back of the room.

8. Developing the proper attitude for following written directions (Smith & Elliott, 1979) (Intermediate/Senior)

   Different reading skills are required when reading directions than when reading other types of information. Details contained in directions acquire significance that might not occur under other conditions.

   The teacher should remove a few details from a set of directions and have the students carry out the directions properly without them. Then have the students compare their set of directions with the original set to see how the added details might make a difference and could influence the results.

9. Providing students experiences with different types of written directions (Smith & Elliott, 1979) (Intermediate)

   Use one type of printed directions common to students. For example, have students bring to class printed directions for playing different games. Then, read and discuss them in class. Which directions are easiest to read and understand? Also, try following some of the instructions for games that can be played in the classroom. Standards for game directions may be put on a chart.

Directions for Playing Games Should
1. Tell how many players can play. 2. Describe the equipment needed. 3. Explain the game in proper order. 4. Tell how to score the game and how the winner is decided.

10. Providing students practice in attending to and following directions (Smith & Elliott, 1979) (Intermediate)

    Have students produce a picture from oral directions which will be given only once. (The picture students will be asked to produce will be a treble clef sign.)

    a. Explain the importance of attending to details when reading or following directions.

    b. Invite students to cite instances when problems have resulted from failure to follow directions.

    c. Ask the students to take out a pencil and sheet of paper.

    d. Give them the following directions:

        (1) Draw a single vertical line that slants slightly to the left side of the paper.

        (2) At the bottom of the line, attach a large comma.

        (3) To the right side of the top of the slightly slanted vertical line attach another line that curves outward from the line enough to make an oval when it is brought back across the original line at the mid-point of that original line.

        (4) At the point where the two lines now intersect begin another line to the left of the slightly slanted vertical line and draw this new line in the shape of the numeral six, except that the small circle of the six should not be tightly closed.

        (5) The bottom of the line forming the six should rest at the top of the comma which was previously drawn.

    e. Have several students put their versions of the figure on the board.

    f. Since one can anticipate several different figures, repeat the words of the directions and discuss what caused the differences.

    g. Present a discussion emphasizing the necessity of paying careful attention to the details when following directions.

    h. Develop content specific directions. For example:

        (1) In mathematics, make a geometric figure.

        (2) In art, draw a scene.

        (3) In science, use a piece of lab equipment.

11. Providing an individualized experience in attending to and following directions (Intermediate/Senior)

    Construct models (cars, boats, planes, etc.) to help build reading skills for many reluctant readers. Students construct these models from very complex written directions which they can comprehend with some dictionary help, ditto word sheets, or teacher guidance. Students also learn the vocabulary associated with the various parts of the model.

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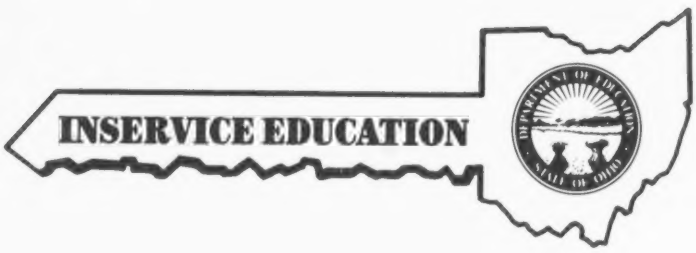

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